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## MAMMALS OF DEEP CANYON

By R. MARK RYAN

As explained in an article in this issue, *Deep Canyon* is a cross section of the Colorado Desert. Practically every species of animals and plants found in the lower desert areas of California and Arizona live in *Deep Canyon*, near Palm Desert and the home of *Desert Magazine*. "Mammals of *Deep Canyon*" is, therefore, a photographic and descriptive manual for the identification of more than 40 desert mammals found throughout the Southwest. Heavy paperback, closeup photographs and drawings of the animals and geological formations, 137 pages.

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**EXPLORING DEATH VALLEY** by Ruth Kirk. Good photos and maps with time estimates from place to place and geology, natural history and human interest information included. Paperback, \$1.95.

**LOST MINES & BURIED TREASURES ALONG THE OLD FRONTIER** by John D. Mitchell. The second of Mitchell's books on lost mines which was out-of-print for many years is available again. Many of these appeared in *DESERT Magazine* years ago and these issues are no longer available. New readers will want to read these. Contains the original map first published with the book and one pinpointing the areas of lost mines. Mitchell's personal research and investigation has gone into the book. Hardcover, 240 pages, \$7.50.

**COLORFUL DESERT WILDFLOWERS** by Grace and Onas Ward. Segregated into categories of red, blue, white and yellow for easier identification, there are 190 four-color photos of flowers found in the Mojave, Colorado and Western Arizona deserts, all of which also have common and scientific names plus descriptions. Heavy, slick paperback, \$4.50.

**ANZA-BORRIGO DESERT GUIDE** by Horace Parker. Third edition of this well-illustrated and documented book is enlarged considerably. Tops among guidebooks, it is equally recommended for research material in an area that was crossed by Anza, Kit Carson, the Mormon Battalion, 49ers, Railroad Survey parties, Pegleg Smith, the Jackass Mail, Butterfield Stage, and today's adventurous tourists. 139 pages, cardboard cover, \$3.50.

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**LOST MINES OF THE GREAT SOUTHWEST** by John D. Mitchell. The first of Mitchell's lost mine books is now available after having been out of print for years. Reproduced from the original copy and containing 54 articles based on accounts from people Mitchell interviewed. He spent his entire adult life investigating reports and legends of lost mines and treasures of the Southwest. Hardcover, illustrated, 175 pages, \$7.50.

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# Desert

MAGAZINE

Volume 35, Number 2 FEBRUARY, 1972

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#### THE COVER:

Nestled between two high mountain ranges, colorful Coachella Valley in Southern California's Riverside County has a warm winter climate and offers dramatic photographic scenes such as the palms and smoke tree near Thousand Palms, California by David Muench, of Santa Barbara, California.

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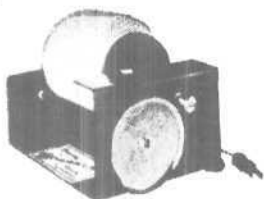


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LOTTIE M. SHIPLEY



# A Peek in the Publisher's Poke

**D**ESERT MAGAZINE through the years has acquired a dedicated following of those who love the Southwest. Men and women from all walks of life have come to feel the publication is *their* magazine and we, on the other hand, feel the readers are *our* family. With this in mind, I want to share with you a behind-the-scenes event in this issue.

Most of you are familiar with articles by Ken Marquiss, whose adventures in looking for lost mines and treasures have appeared frequently in DESERT. This issue contains his manuscript titled "Verboten!"

When Ken asked Bessie, his wife, who types the final draft of his stories what she thought of it, she said, "Oh, it's all right—but it has a lousy title, it should have something real catchy like 'Why Men Leave Home'. And you left out all the interesting things!" Ken denied omitting anything and Bessie retaliated by saying, "I ought to write the real account and send it in . . ." Ken at this juncture issued the classic "You wouldn't dare!" Well, Bessie Marquiss did too dare and we received her manuscript which she intended to be included into Ken's article. When we read it we felt that it could stand on its own merits and that the readers would enjoy it. We called Ken and explained that we'd like to run *both* stories but would he not let Bessie know because we were sure she would not agree. After 36 years of a no-secrets marriage it took some talking to convince Ken it was the thing to do. Now comes the great double surprise. Not only does Bessie not know we are printing her entire story, but Ken doesn't know what she has written! Can you imagine the Marquiss home when DESERT arrives this month? Congratulations to a great couple who, by sharing with the readers their "His and Hers" experiences, have added greatly to the informal style of family reading that is DESERT Magazine.



*Ken and Bessie—One secret in 36 years.*

As in past years, this month's issue is devoted to Southern California and especially Coachella Valley, home of DESERT Magazine and the Riverside County's 26th annual National Date Festival, February 18 through 27. In this regard, we have included two pages of date recipes for the ladies. Nature lovers will enjoy K. L. Boynton's treatment of the small kangaroo rat and rockhounds will want to head for the hills after reading Mary Frances Strong's article on collecting bloodstones in the Orocopia Mountains.

*William Knappe*



# Desert Magazine's Gateway To Adventure!

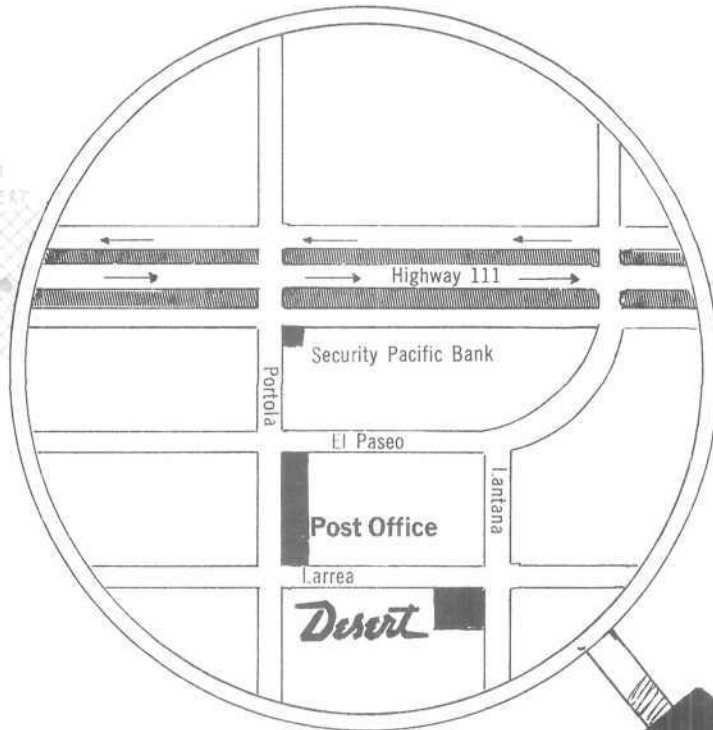
One hundred and twenty miles east of Los Angeles and northeast of San Diego is the community of Palm Desert and the home of DESERT Magazine. It is the hub of a vast recreation area which includes Riverside, San Bernardino, Imperial and San Diego Counties. Within this area are hundreds of miles of back-country passenger car roads and a myriad of four-wheel-drive trails—all leading to adventure for rock-

hounds, bottle collectors, history buffs, lost mine explorers, photographers and nature lovers. In addition to running many articles on these areas we have an Information Center at our offices in Palm Desert, and will be happy to suggest places to explore and things to see during your trip. So the next time you are in our area, stop by our Information Center and browse in the Book and Gift Shop.

FOR A SUBSCRIPTION TO DESERT MAGAZINE, USE COUPON ON PAGE 49

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# Book Reviews

by Jack Pepper

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## DESERT GEM TRAILS

By  
Mary Frances  
Strong



One of the most popular and authoritative books on the Mojave and Colorado Deserts for rockhounds and back country explorers is once again available in a second revised edition.

Mary Frances Strong, who combines a degree in geology with years of field trip experience, has completely updated her detailed guide book which has been on the best seller list since first published in 1966.

Since she first started writing after graduation from college, her articles have appeared in national and regional publications. Two years ago she accepted the position of Field Trip Editor of Desert Magazine and her articles now appear every month in this publication.

With her husband, Jerry, who is the photographer in the husband-wife team, and their dog, Lobo, Mary Frances revisited nearly all of the sites described in her first edition in order to show changes in access roads, availability of materials and whether the areas are still open to the public. The new edition also includes many other new collecting areas.

An outstanding cartographer, she has revised and updated her 89 detailed maps in the new book, each one of which is tied to a check point that can be found on regular oil company road maps.

The maps cover over 90 separate localities in the Mojave and Colorado Deserts of California and adjacent areas in Nevada. Over 200 individual collecting



sites for gemstones, minerals and fossils are described.

Each locality description includes data about road conditions, camp sites, facilities, availability of supplies and points of special interest with thumbnail historical information if pertinent. Symbols on the maps show areas of special interest such as Indian camp sites, petroglyphs, wildflowers and unusual or picturesque geologic or scenic attractions.

Although primarily directed to gem, mineral and fossil hobbyists, the new *Desert Gem Trails* is also for those who want a guide to explore the back country. Readers of the first edition will also be pleased to find the new book is set in much more readable type plus better reproduction of the maps.

Designed to be carried or fit in the glove compartment of a car, the new guide is heavy slick paperback, 80 pages, and (believe it or not) is still the same price as the first edition, \$2.00.

## COMMON EDIBLE AND USEFUL PLANTS OF THE WEST

By  
*Muriel Sweet*



How the Indians, pioneers and early Spanish-Americans used many of the common wild plants of the West for food, health tonics, building shelters and making artifacts is described in this book.

Written in easy-to-understand language and illustrated with black and white detailed drawings of the plants, it also includes interesting facts about the forgotten lore of many of the plants.

The plants are arranged in five categories for identification: water plants and ferns and their allies, trees, shrubs, herbs and vines. Description of the color of the plants also helps in identification, along with geographical location and habitats.

The author also has identified poisonous plants and describes in detail how to avoid them. She has been collecting and identifying plants many years and is considered an authority on the subject. Heavy paperback, 64 pages, \$1.50.

## THE INDIANS AND I

By  
*Peter Odens*



A newspaper columnist and author of four previous books, Peter Odens and his Oriental wife have been exploring the West for 18 years and during that time have gained the friendship and trust of hundreds of Indians with whom they have visited and lived.

The fact that Odens is of dark complexion and his wife is often mistaken for an Indian has helped them in their initial contact with Indians. However, it is their desire to understand the people they meet that turns the original contacts into lasting friendships. As his wife states:

"Indians seem to feel his sincerity, sympathy and understanding, and this is why they are at ease with him and talk to him freely. I, as an Oriental, who looks like an Indian, can act as a door opener and help him in the early part of the interview."

Odens writes in a style reminiscent of Ernie Pyle and it is this down-to-earth writing, combined with his ability as a reporter to delve into intimate details that makes *The Indians and I* an unusual book.

As stated before, this reviewer is gratified to see the renaissance of interest in the Indian culture of our country.

Writers like Peter Odens are contributing toward this appreciation of our American heritage. Paperback, illustrated with interesting photographs, 89 pages, \$2.00.

**NOTICE** all the books reviewed in *DESERT Magazine* are available through the **Desert Magazine Book Shop**. Please add 50 cents per order (not per book) for handling and postage. **California residents must also add 5 percent sales tax for the total amount of books.**



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# CAMP MIDDENS

**K**ITCHEN MIDDENS is a term used by archeologists to describe the refuse dumps, trash and personal belongings that have been abandoned by prehistoric Indians or by unknown persons.

We who travel the back roads frequently encounter old mining camps and ghost towns. The curiosity aroused by visiting such sites is somewhat satisfied when one knows a few facts about dating the middens.

Mining activities can be classified into four periods of habitation in the western United States. The oldest sites are those occupied before 1900. Camps existing between 1900 and World War I, are included in the second group. The third period covers the 1920s and early 1930s, and the last group takes in activities after the '30s, and brings us up to recent days.

Old tin cans are usually found scattered in and around old deserted diggings. Rusted from exposure and often half buried in

by Helen Walker

If you feel you have spent too much time slaving over a hot stove, tell your family you are leaving your kitchen for another. Then quickly explain the other "kitchen" is a midden which can be shared by the entire family. Within these kitchen middens can be found old bottles of all shapes and colors, door knobs, candlestick holders, square nails, vases and other collector items, plus ancient sea shells, Indians potshards, arrowheads and other artifacts.

So if you are down in the dumps from too much housework, head for an outdoor dump and temporarily exchange your kitchen for a kitchen midden.

the sand, they are a real clue to dating the middens. Preserving food in cans was introduced by Great Britain as early as 1834, and by 1890 they were shipping large quantities to the United States. These early tin cans were made by two methods of manufacture—either by folding the seams, or by soldering them. After being filled with material, lids were applied in the same manner. A small hole was pierced in the top to let expanding air escape during sterilization—the hole later closed with a drop of solder. If you are fortunate enough to find a can with these features, you have discovered a site of probably pre-1900 days.

It was during the second period of time that new methods of manufacturing changed the tin cans. These new types had crimped seams and ends. During the '30s, another identification of cans is noted—bright color printing appeared, and the familiar triangular opening of



*Some prefer a metal detector to a shovel for exploring. Enjoy your search, but do not destroy.*

beverage cans was universal. The bright metal cans you see in or near old camp sites, belong to the most recent group—they are of aluminum.

Old bottles are always exciting to find—especially if you can date them. Like tin cans—bottles have a colorful history. Manufacturing of glass was one of the first industrial ventures of the early colonist. The factory was located at Jamestown in the early 1800s, and they produced, primarily, bottles and glass beads to trade with the Indians.

These first bottles are easily distinguished by the seam that extends along the sides, and comes to an end on the neck—sometimes the seam is straight, and sometimes it is curved. From this point, the bottle maker finished the bottle by hand. He heated the fractured neck and bound a band of molten glass around the end of it. With this addition, he finished shaping the inside and outside of the neck. The opening at the top was fashioned to receive a cork stopper. Bottles as described above are for the most part pre-1900 vintage.

Soon after 1900, bottles were machine made. However, it was not until after World War I that the new bottles reached mining camps in any quantity. You will recognize these machine-made bottles by the seam that extends the full length of the bottle and even over the lip of the neck.

Another change in bottles took place in the early 1900s—the cork stopper was replaced by a bottle cap. Some of these newer necks were still hand fashioned. They had a ringed neck, sometimes called crowns. Screw top bottles and Mason canning jars were introduced in 1858.

For accurate dating of your bottle finds, it is suggested that you try one of the many good bottle and glass handbooks, available at the Desert Magazine Book Shop.

Most old mining camps or cabin sites seemed to be paved with glistening glass fragments—another clue to dating the habitation of an area. An abundant coverage of purple pieces will indicate occupancy prior to World War I. The newer camp sites will have a high percentage of clear glass. Nearly all the glass found in



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*Some of the bottles found by the author and members of her family during a pleasant weekend digging among kitchen middens.*

and around old camps was at the beginning, clear glass. Its exposure to sunlight has caused photo-chemical changes in the manganese oxide in the glass, thus causing the clear glass to turn purple.

The length of time for this color change to take place depends on several factors—composition of the glass, the manganese content, and its exposure time in the sun. Under optimum conditions, color change may occur in a month or less.

You may find bottles that, for one reason or another, are partially buried. In this case, the portion above the ground will be colored, while the part below the ground surface will be the original clear glass. Some bottles turned in color before their gummed labels wore off—look for color variations on these bottles.

Depth of color is often affected by the color of the background on which the bottle rests. Violet color seems to accelerate color change—while black or brown



seems to retard color change.

Regulations of materials came when bottles were machine made. Our modern glass contains less than 0.001% manganese, and 0.002% iron. Glass that changed from clear, to shades of purple, contained more than 0.1%, and in some instances as high as 1.0% manganese. Deepness of color is in relationship to this percentage content.

Some bottles found at old camp sites have corroded surfaces, while others show an iridescence. This condition is a result of excessive alkali in the mix content, namely sodium. Much of the utility glass used in early days was created from a mixture of soda-lime and silica—it was known as soda-lime glass. These chemicals, like others, were regulated when glass became machine made.

Bottles were made in other colors besides clear. You may find bottles that are blue, amber, green and some brown. No matter what the color—the dating methods are the same.

Besides tin cans and glass, there are numerous other tell-tale means for dating the middens. Cooking utensils ran through a series of changes—tin, coated, and finally aluminum. Newspapers and magazines were often used for insulation in walls, and if care is taken, these may be retrieved without damaging the buildings. Square nails are often found in old buildings or in loose boards—this is your clue

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that the place was inhabited prior to 1900.

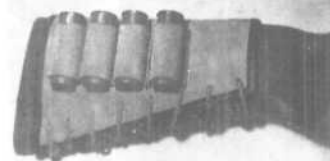
Camps of the third period, 1920s and 1930s, will perhaps have a few old automobile parts. The beer can and the introduction of aluminum cooking utensils mark this period also.

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# VERBOSENT!

by  
Ken  
Marquiss

## “He Did It His Way...”

by Bessie Marquiss

IT STARTED out so simply. There it was. An authentic, first hand, bona-fide, coded treasure map; complete with code key to decipher it, and even with additional brief directions of the route to reach the area. With good weather and a week's time, sure Kenny could walk right up to it!

That was 20 eye-opening years ago. There has been good, fair and bad weather; and too many trips to count, some up to a month long. By truck, by burro, on foot, by plane—but no mine.

For over half our married life, we have brooded over, discussed, planned for, saved for, been disappointed in, and taken innumerable trips to the Santa Rosas, seeking that lost Indian mine. The youngest of our three children cannot remember when Daddy's life didn't include Santa Rosa trips.

The older ones can recall the early days of being cautioned to be careful not to say exactly where Daddy was looking for a mine this time, lest someone else get wind of the map he so zealously pondered over, and locate it before he had the chance.

So indoctrinated have the children been to his travels, that when I used to sing lullabies, and reached the inevitable "Daddy's gone a-hunting, To find a little rabbit skin . . ." the baby would rear up his little head and protest loyally, "No, No! Daddy's gone to the desert!"

When he returned unsuccessfully from his second trip, one of my friends asked with interest, "Does he know about where it is yet?" And I answered, "Not really; but he knows some places where it isn't."



**For 20 years Ken Marquiss, author and veteran treasure hunter, has searched for a lost gold mine in the rugged Santa Rosa Mountains. Today he is calling it quits. In this dramatic account he explains why he is abandoning the search—and why he thinks someone will eventually find the Lost White Papoose Mine.**

A LONG TIME ago, a certain cold eyed, disenchanting Infernal Revenue Service bureaucrat-surgeon (who used computer juice for blood and a big red pencil for a scalpel) once diagnosed my desert-roaming hardrock prospecting and lost mine chasing as —“Uh huh; strictly a hobby, Mister!”

And in the light of its subsequent lopsided fun-to-profits ratio he may have been right.

Anyway, in the entire course of this lifetime “hobby,” only twice, at different times, have I ever held in my hands what I considered to be a genuine original lost mine or treasure waybill.

The first one gave directions to a big cache of raw placer gold buried in a pickle crock beside a big rock about 72 steps from the door of a ruined cabin on the banks of a river in the far north, about the time of the Alaskan gold rush.

The second one gave step-by-step directions, with a map, to a rich gold ore lode far back on a remote ridge in the twisted vertical labyrinth of what is now known as the Santa Rosa Mountains in Southern California's Riverside County.

Since I had to work for a living, and there were the prime factors of groceries, housing, kids and clothes to be considered (to say nothing of staying within the patience of a wonderfully good-natured, long suffering wife) I naturally concentrated on the closer subject.

Now, some 20 years of scattered spare time hunting later, I am convinced the choice was a mistake—not in logic, but because of those diabolical mountains. It would have been cheaper in time, and money, to have pinched my pennies for one slam-bang trip to the rim of the Arctic.

The colorful Santa Rosa range makes a 6,000 to 8,000 foot high divider between the Palm Springs-Coachella Valley area to the north, and the Anza-Borrego graben valleys to the south. The fact that there was not (and is not today) anywhere for almost 50 miles a road across those mountains — even for a jeep — should have tipped me off to what I was getting into.

They are the most deceptive range of mountains in which I have ever done back packing. Unlike the brooding hori-

zon backdrop of the Arizona Superstitions, the Santa Rosas don't look exciting from a distance. Gold hunting in those Superstitions is tough enough, but prospecting in the Santa Rosas is sort of like teaching a lesson to a smart aleck little guy who turns out to be a cool experienced slugger. You're in close before you realize you are headed for trouble!

It all seemed simple enough to start with; and I bumped into the business quite by accident.

One crisp fall Saturday in '51 when I lived in Redlands, California, I was tail-high busy on the innards of my balky jeep, when a long-time friend and neighbor drove into her adjoining driveway and honked the horn.

She had been to some kind of seminar in Palm Springs and handed me a copy of a localized publication of the time printed there. It contained a long-winded story about a prominent Palm Springs woman who had once looked for a lost mine in the neighboring mountains.

Figuring it was just another vague “lost mine” yarn, I tried to appear grateful—but as soon as the neighbor was out of

For to our surprise it wasn't in the directions and the map so definitely pinpointed. Stocked as our household is with topographic maps, it was easy to spread them out on the dining room table and try to make the map dovetail. “Seven miles south of Palm Springs is a wide, sandy wash . . .” There certainly was. And up that wash was a spot neatly labeled “17 miles . . .” A little north and to the right on the topo, some tiny printing indeed indicated “Tanks . . .” What more could one ask? Only someone who knew that country like one's own back yard could have sketched so clear—and with proportion the geographic essentials, when he was ill in a strange boarding house nearly 2,000 miles away. It must be true.

But arriving on the scene, Kenny and he could follow no more of the

directions; furthermore he insisted the mud flats he encountered could geologically harbor no ore-bearing rock. So he tried instead to find the designated Indian trail; did manage to locate some Indian symbols and a rock house. But not in sequence, and without a “white rock standing like a sentinel on guard.”

We decided a view from the air would save valuable time and cut down walking and packing supplies. With a rented camera, he flew survey trips, overlapping the shots he took so he could have them enlarged and examine evenings. What sometimes looked to me like a flaw in the negative, he saw as an ore dump; or a water tank; or possibly a mine shaft. So in on foot for another trip to verify or rule it out.

The miles he covered took their toll on boot leather. We became well ac-

quainted with the local cobbler; and he in turn grew so interested in the search that occasionally he would hand back the re-soled high boots and say cheerfully, “No charge this time. Maybe it will bring luck.”

The jeep tried valiantly to hold the load of gear such out of the way places demand, and still plow up the sandy washes or climb the impossible rocks. Then it seemed that a camper which would afford both packing and living space would eliminate having to set up camp part of the time. So in 1959 a Ford truck took its place in our garage. A few years later a trail bike seemed the perfect answer to getting up narrow washes without having to back-pack such a load, so a Tote Gote was added. But always it ended up with being a lot of leg work for in no other way can these canyons be conquered.



*In a typical "spike camp" high in the Santa Rosa Mountains, the author fights the cold winds as he lights a fire for a meager breakfast.*

So I really got to know the south and west sides of the Santa Rosa Mountains, and that was why the Palm Springs woman's map made such an impression. (We never did find the planes, and the first storm-smashed wreckage was not spotted until about 16 years later, far to the south. It's still a big desert.)

The more I looked at the map the louder the little golden greed gongs reverberated in the back of my head; and the obvious next step was to check the documents for kosher—so I got busy on the phone. Eventually I was able to set up a meeting at the home of the owner of the waybill.

My host turned out to be a Mrs. Zaddie Bunker, a most gracious lady; who had tea and cakes waiting when I drove into her Palm Springs place at the appointed time. (She later gained a certain measure of fame when she became interested in flying, bought a plane and earned her pilot's ticket and entered the Powderpuff Derby—all at an age that caused the news media to tag her as "the flying grandmother".) She was one of the very early residents of Palm Springs, and was cut from the fine stuff of the real pioneers.

sight I tossed the magazine on the garage workbench and went back to my repair job.

So it was almost a month before I got around to sorting the meat from the feathers of the story—and then I had a jolt! The article had a picture of the map; the wording of which seemed to be mostly numbers.

As I slowly turned the map picture this way and that—something clicked. I suddenly recognized the area, and I could see—if the map had been drawn in 1874

as the story indicated—that the map maker did indeed know his area. There were things indicated that did not show on modern maps!

The reason was during World War II I had volunteered for duty with the California State Guard. Late the next spring, after a severe thunder storm on the Borrego Desert, our Company K, along with several other adjoining outfits, was ordered into the Anza-Borrego area to hunt for a flight of planes being ferried from Tucson that had vanished in the storm.

Consequently, weight is always a problem. A couple of times he arranged for pack burros to take him in and call back 10 days or so later. Dehydrated food is a delight if there has been a recent rain, but as a rule it's necessary to carry in every bit of drinking water and cooking water; he felt lucky if he located enough alkali water for washing. Here is where instant coffee won out just because of the wasted water needed to soak up regular grounds. The height of cutting down on spare ounces came the time I caught him methodically unrolling toilet paper, so he wouldn't have to carry the cardboard tube it came on!

In their teens, the boys each accompanied him occasionally. John got some beautiful color snapshots, and a host of memories; among them was the endless joggling of the vitamin pills in his

father's pack on the trail just ahead. Charles was along the time they found an airdrop of a quantity of canned food on an isolated ridge and enjoyed some delicious, though dented, peaches and tomato juice.

The source was a mystery until a state park man identified it as a food drop to a troop of Boy Scouts on a remote pack-in hike some months previously. As a rule he had the mountains entirely to himself, but over the years he did meet three or four other back country hikers. Always one to carry snake bite kits, he has been surprised the past several years to have found no rattlers around.

When our city enacted a well enforced leash law, and we sympathized with our formerly carefree dachshund who felt being tied to the clothesline was punishment, Kenny decided to

take him on a trip too. We forgot how rough the terrain was, and after the second day he decided to go no further on foot himself, but perched atop a rock and waited to be rescued. So carried out he was, slung scarf-like across Kenny's shoulders. A trip back to Redlands returned him to civilization and safety, and Kenny went back to resume his search alone again.

Yes, except for our boys, he was always alone. He is a loner type of guy; plans ahead for all potential spots; knows best what he likes and how much he needs in supplies.

Having hiked up canyon after canyon without finding the needed clues he at last decided there was something amiss with the directions. Maybe the owner was trying to protect the girl he wanted to leave his treasure to by making it secret to an outsider, but by hav-

This gracious lady passed away several years ago.

There was no question of the age of the faded brittle papers she showed me. The map was drawn on unlined writing paper commonly used in the 1860s and the directions—in a cleverly worked out double-numeral code—had been written on the pages of an 1871 diary. At the top of each page, the day of the week and the date were printed, encased in the scrollwork curlicues that were the vogue of those days.

The story that Zaddie told me was even more fascinating.

She said that in the early 1920s she and her husband, Ed, had been running a small hotel and garage in Palm Springs. Ed was a good Model T mechanic, and for several years an older woman had come in each fall for Ed to tune up and check her car for travel on the desert. So, in time, she and Zaddie became very good friends. The woman's name was Ellen Bruckmann.

Eventually, around 1925 I think, Ellen came in one late spring day after a winter on the desert to have Ed check her car for the return trip to Los Angeles. She sadly told Zaddie she wouldn't be seeing her much any more and that because of her age she was going to have to give up a project she had hoped would make her very rich.

That evening at the hotel, Ellen filled

*Marquiss' trail bike is loaded with a small tent and other gear as he prepares to head for higher country and establish a "spike camp."*

Zaddie in on the details of the project. She said that when she had been a girl back in St. Louis her widowed mother had run a boarding house to make a living.

One day a deeply sun-browned, quiet sort of man who walked with a limp, asked at the door for a room. He stated he was tired, didn't feel too well, and wanted to rest up for a week or so. He was reserved in conduct and courteous at meals and was a welcome guest. He paid in advance in gold coin.

Within the week, however, it became evident the boarder was much sicker than he had first thought, and a doctor was called in. He prescribed some medicine and said he would call back in a few days.

The doctor's second visit was all bad news. He diagnosed the boarder's illness as terminal and gently suggested the boarder wind up his affairs as best he could as soon as possible.

The next morning the boarder asked for some writing materials. A couple of days later when Mrs. Bruckmann brought his supper tray, he asked if she would bring Ellen as he had something he wanted to tell them.



He said that he couldn't find any relatives because he actually didn't know his own last name. This was due to his parents having been a part of a small pre-19er wagon train going west and he was only a small lad just old enough to vaguely remember the trip.

At the first light of the second dawn at an oasis the little band of immigrants was hit by an Indian war party, and the butchery was swift and efficient. The boy was marked for death too, but he fought back so wildly the admiring war chief decided

ing verbally given her some missing information. For example: Follow all directions as given except substitute north for south every time it appears. When that possibility led nowhere, he re-worked it east for west. When it read the south side of Rabbit Peak, perhaps it had meant the north side. And so on.

On one occasion, late in 1969, he truly felt he had found the right search area, with all anticipated landmarks; and through field glasses had even glimpsed the mine shaft opening. Sudden intense cold, followed by snow, forced him out, but within weeks he was back for what he felt sure would be the successful finale. Until he was within 100 yards of it he thought he had the answer at last. Then close inspection proved it to be a rare and dramatic, but natural, fault in the cliff.

Once he had to leave his gear, even the Tote Gote, covered and stashed away and make it out on foot just ahead of a flooding rain. Several times the weather turned so hot so suddenly he was obliged to come out for more water. One severe wind caught him and tore away his tent, air mattress and much other light equipment.

One snow storm caught him unprepared and he made a fast trip to Riverside to buy a down (which we had always felt was a luxury we could not afford) sleeping bag on credit. The seasons are changeable there. You may wait for weeks for the thermometer to drop below a hundred, but when it does it drops 40 degrees in a few days.

Time after time he has made the "last trip. There's no other place to look." But after being home awhile, he begins to wonder about another can-

yon; and, wondering, begins to build it up as a possibility; until in a few months there's a good chance it just might be there. But this time he says not.

Years are creeping up, and it takes longer to get rested and free of the aching weariness that miles of up and down hiking bring on. Promising though the story still is, there must be an answer. Perhaps a flood, perhaps an earthquake has obliterated the essential clues.

Life without the Santa Rosa dream is hard to visualize. Other travels, other yarns, will doubtless attract, but seldom is there one to which is devoted a score of years. At least, in the words of the current song, he can think back on all his experiences and console himself with the conviction, "I did it MY way."



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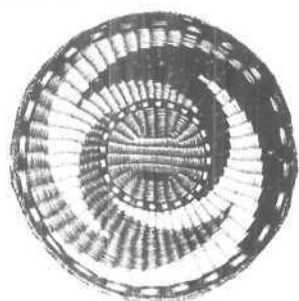
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this snarling little white papoose would make a good Indian! And so he was taken into the tribe.

There are gaps in the story that Zaddie said Ellen didn't clear up—like where the boy learned his "readin' and writin'." and where he picked up his mining experience. But she did say that on a bighorn hunting trip the Indians showed the adopted member a ledge of fantastically rich "jewelry rock" gold ore, reminding him it was strictly for Indians!

The boarder gave Mrs. Bruckmann the map he had drawn, the coded directions and a slip of paper with the key to the code he had worked out. He told her to keep each in a separate safe place because, as he told her over and over, it was the secret to a bonanza rich gold mine.

He also willed to her, in return for her many kindnesses, all of his personal belongings; remarking wistfully—and with a little bitterness as he did so—that now at least he had "sort of a family."

Before the month was out the doctor's diagnosis proved correct and the contents of his small flat trunk and the battered leather suitcase bought the boarder a proper funeral.

The luggage had contained a surprising amount of minted gold coin, a small square English biscuit tin full of rough surfaced raw gold that averaged about wheat grain to corn kernel size, and three sample pieces of dark, reddish brown ore of about crabapple dimension all sprinkled with little chips and threads of the yellow metal. The burial was in 1874.

It was not until several years after her mother's death that Ellen sold the home and came west to look for her mine. She told Zaddie that year after year she would come to the area and then hire a Mexican with a string of burros to wrangle the animals and set up base camps in the Santa Rosas. From these camps she used to search on foot, year after weary year, without one glimmer of encouragement. Always those brooding peaks and dark canyons seemed to silently growl "VERBOTEN!"

And now she had to admit it was all over, and her golden hopes were shattered.

Zaddie tried to console Ellen as best she could, and then she had an idea for a possible solution. If Ellen had a really good set of directions that she could no longer work on herself, why not give Zaddie the map? Ed was a competent out-

doorsman and they would go out and see if they could find Ellen's mine for her on shares.

The idea appealed to Ellen so Zaddie rode to Los Angeles with her where Ellen took the waybill from her safe deposit box at a bank and gave it to Zaddie. However, it was not until late the next spring the search became a reality.

Burros were loaded on a truck, and the pack trip actually started at a ranch near what is now the Oasis School. Their luck was no better than Ellen's and, weary and footsore, they were glad to see the truck again. An unseasonal heat spell had hit, the burros were more balky than usual and Ed suffered a minor heat stroke trying to load them back on the truck. His illness threw the full management burden on Zaddie, so it was some time before she got around to contacting Ellen to report their lack of success. When she did, she learned that Ellen had passed away a couple of weeks before.

So the waybill was put away between the pages of a book "until next time" since there was nothing they could do to help Ellen any more. Some time later Zaddie and Ed came to the parting of the ways, and a divorce followed. The waybill in the book was forgotten and there wasn't any "next time" lost-mine hunting vacation.

Forgotten that is, until early 1951, when Zaddie was having dinner with friends and the talk drifted to the stories and legends of the Palm Springs area—talk that included the well known story of the Indian known as Fig Tree John, and the shiny rich ore-nuggets he periodically brought back from the mountains to swap for food, booze and the gaudy trinkets that delighted his heart.

He regularly wintered at a brush shack a couple of miles from Fish Springs (now known as Desert Shores Resort on the Salton Sea, just off Highway 86); and it was from there he was reputed to have disappeared into the mountains to the west for three or four days whenever he needed swapping stock.

Unlike the white man, Fig Tree John wasn't hoggish and took out only enough for his current wants, and he could keep his mouth shut so he took the secret of his treasure vein with him when he "went to join the old chiefs."

When Zaddie joked that it might have been Fig Tree John's Mine she was actually hunting a quarter century before, one

of the guests—the publication editor—smelled a story and ultimately persuaded her to let him write up her experiences for his readers.

Zaddie told me that since the information was already public knowledge, she didn't expect a cut, but I had "better be darn sure" she got the first and best samples of ore I cut from the vein, as mantel souvenirs. Just to prove to certain people she wasn't a fibber.

So we laughed and shook hands on the deal, and I promised the ore—a promise I was never able to keep.

I was high all the way home—for, with the shorthand record in the notebook and with prints of the documents safely stowed in my briefcase—I felt like a nine year old with a new birthday bike. I also felt as sad as an Irishman on tranquilizers, because I knew it would be a month or two before the job I was on would wind up and I could really take a whack at the lost mine! I was sure someone else would find the ledge before I had a chance at it, the directions looked so good. If I had only known those Santa Rosas then, as I know them now, I could have saved myself quarts of adrenalin!

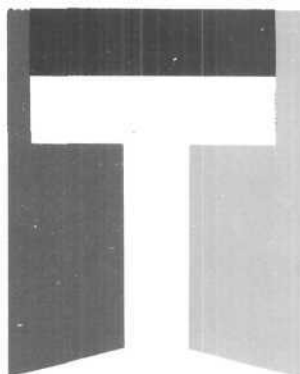
On the free weekends while the job was running, I busied myself checking and double checking equipment and trying to contact Ed Bunker. Eventually we got together, and he generously gave me all the time I wanted.

He verified the basics of the story, and gave me some of the details I was hunting. He said that the ore was not iron-heavy quartz as I had thought, but a very dark brown close-knit granular rock. He said he had quizzed Ellen, and she had maintained there were *two* paystreaks in the vein, separated by about a foot "of soft stuff" (she probably meant gouge). His impression was that the dip was almost vertical, and the strike was very close to north-south.

He said Ellen indicated the original owner had "closed up" the entrance before he left; and that he had not shipped out ore by pack animal as in common practice, but had merely taken the best of the highgrade to a nearby pothole water supply, where he mortared it up and panned out the metal.

He said Ellen had "about two inches in a big seltzer bottle" of the original gold, and the rough-sided configuration of the

*Continued on Page 40*



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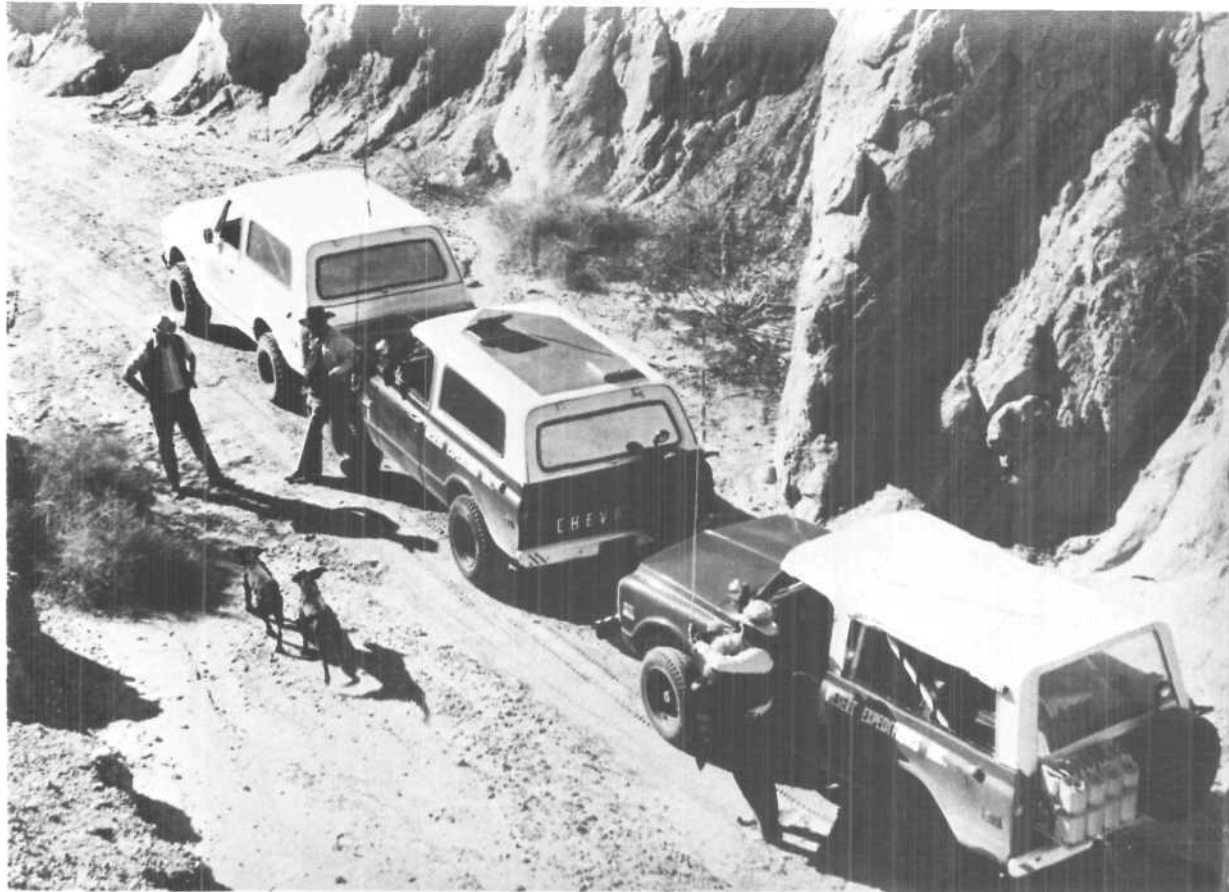
# FLORA, FAUNA

by  
Jack  
Pepper

*Even though pulling the chuck wagon, the four-wheel-drive Blazers easily travel down a sandy wash.*



George Service and Bill Knyvett, publisher of *Desert Magazine*, (opposite page) discuss geological formation of the Mecca Hills. The caravan makes a stop at the entrance of Hidden Canyon (right) so *Desert Expedition's* two mascots can explore the area in their own way.



# AND 4-WHEELS

ground for the "golf and country club set."

Palm Desert has another face which is not as well known. As extolled by *Desert Magazine*, it is the hub of a vast recreational wheel within which are located the Santa Rosa Mountains and its resort communities, the Salton Sea, Anza-Borrego State Park, San Jacinto Mountains with its Tramway and wilderness area, San Bernardino National Forest and the "high desert" which includes the Joshua Tree National Monument.

These are only a few of the scenic areas which attract thousands of outdoor enthusiasts to the Coachella Valley which has dozens of private and public parks to accommodate the campers and travel trailers of families from the metropolitan areas.

All of the before mentioned attractions can be reached on paved highways or good gravel roads by passenger car. There are hundreds of other secluded areas where the wonders of Nature are still in a pris-

tine state and where families can find peaceful isolation.

In these isolated spots you can walk through the desert and enjoy the miniature flowers which cannot be seen except by foot, photograph the many small animals and birds, or hike up mountain canyons in search of precious stones, remains of prehistoric Indians and old mines and watch for wild burros, coyotes, kit fox and bighorn sheep.

These areas can only be reached by four-wheel-drive vehicles. Today, passenger car families who have once tasted the thrill of exploring the semi-back country are now investing in four-wheel drives as their second car so they can enjoy these areas of the West.

(This is evidenced by the people who stop by *Desert Magazine's* Information Center in Palm Desert and who proudly show off their "new rigs" and exchange views on the best types of tires, two-way radios and other off-road vehicle equipment.)

As a result of an enterprising former banking executive who turned his 15-year-old hobby of exploring the back country into a business, people without 4WD vehicles can now see these wilderness areas around the Coachella Valley.

Taking a cue from the safari guides in Arizona and Utah, George Service last year established Desert Expeditions, Inc., and today is one of only a few four-wheel-drive back country guides in Southern California, and the only one in Riverside and San Bernardino Counties.

His one-day (or longer) tours include trips into the little-known parts of Anza-Borrego State Park, Joshua Tree National Monument (where he is the only licensed guide), the historic Dale Mining District in the "high desert" and Death Valley. He also has half-day trips into nearby areas in Coachella Valley.

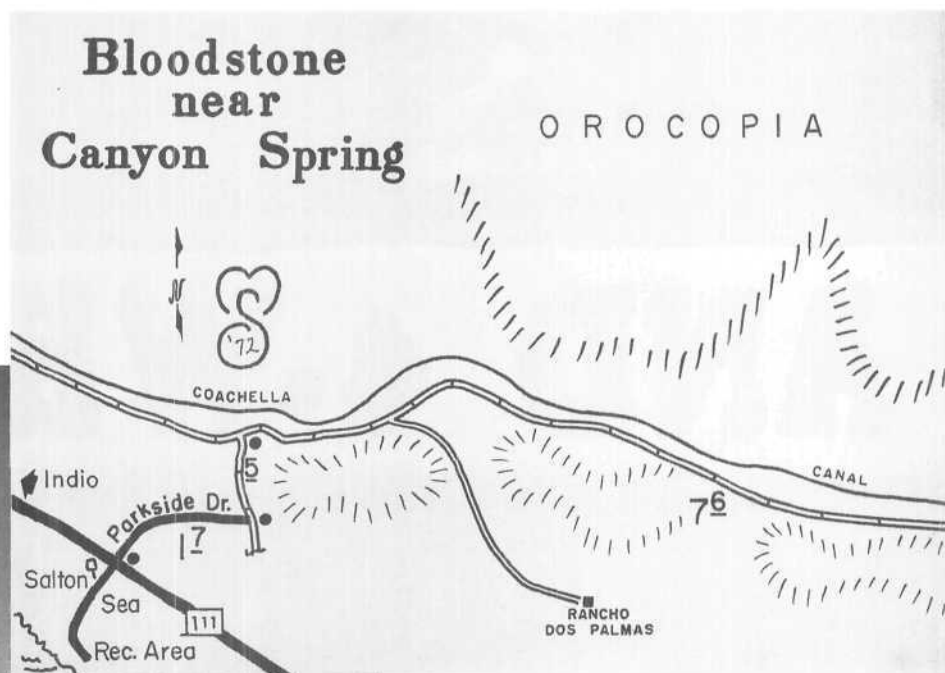
One of his interesting excursions is into the Mecca Hills at the base of the Little San Bernardino Mountains where the San

*Continued on Page 24*

# BLOODSTONE IN THE OROCOPIAS

by  
Mary Frances  
Strong

Photos by  
Jerry Strong



**I**N FEBRUARY, winter still has a tenacious hold on many parts of the Great Southwest. Cool, damp fog embraces the coastal areas; frost and snow visit the mountains; while chilling winds sweep the high desert and plateau regions.

Rock collectors begin planning trips to the southern desert where high mountains encircle sea level elevations. Thus, protected from the majority of winter storms, the Coachella Valley in California's Riverside County enjoys a balmy clime. If you haven't explored Salt Creek Wash or the Canyon Spring area—and added a nice bloodstone specimen to your collection—this is the time to go!

The temperature at our desert mountain home was hovering at 32 degrees when I casually asked the other member

# A California Field Trip

*The high railroad trestle (opposite page) marks the end of the road for passenger cars; only 4WD vehicles can continue. Eroded sandstone (right) forms a geological fairyland near Canyon Spring which is a good camp site. Author holds an excellent specimen of bloodstone (below) which she found in the seam behind her hand.*



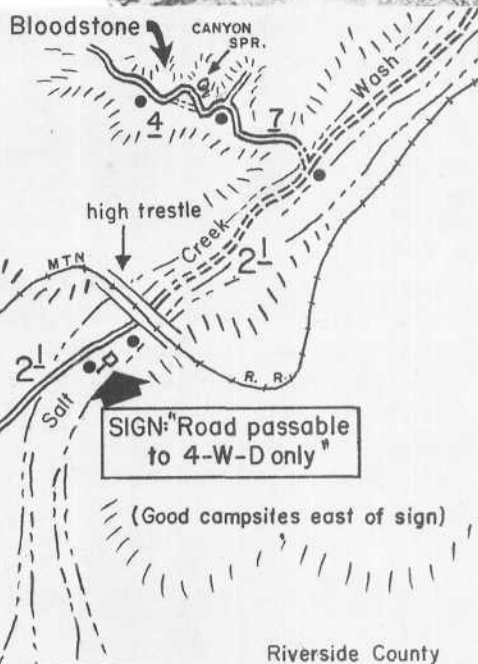
over the alluvial fingers of the Orocochia Mountains. We were now following the route of the Old Bradshaw Road.

A rumbling sound caught our attention and then, in the distance, we saw the heavily loaded Eagle Mountain ore train snaking its way through the hills on the long downward slope to a junction with the Southern Pacific Railroad.

We crossed the tracks, entered Salt Creek Wash and were confronted with a sign "Passable to 4WD Only." At this point, five miles from the canal, the sign is best heeded as heavy sand lies ahead.



MTNS



of the team, "How about checking out Salt Creek Wash and seeing if any bloodstone remains near Canyon Spring?" Jerry's answer was enthusiastically in the affirmative.

Four hours later found us peeling off jackets and rolling down windows as we drove south of Indio in 84 degree weather. Our route followed Highway 111 to the sign "Salton Sea State Recreational Area" where we turned left onto Parkside Drive. In just over two miles, we reached the Coachella Canal and headed east along the graded road paralleling its length.

We passed the turnoff to the Dos Palmas Ranch—once a way-station along the old Bradshaw Stage Road. Here, weary travelers could refresh themselves, try their luck at gaming tables and enjoy an

overnight rest before continuing their travels. Dos Palmas also figures in the annals of stories about buried treasures.

One of the stages was held up, robbed of its cargo of raw gold while all on board were murdered. Not long afterwards, a man was drinking heavily at the Dos Palmas bar and paying for his liquor with raw gold. He was arrested and later shot when trying to escape. The gold was never recovered and is believed to be buried somewhere along the Bradshaw Road—possibly near Dos Palmas.

Continuing along the canal we saw several fishing parties whose answer to our inquiry about their luck was, "Caught some dandy catfish." Just over six miles from our entry onto the canal road we turned left and began a leisurely climb



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A good, open camping area will be found near the hills, east of the sign. Watch for the faint tracks leading to them. Trailers may be taken to this location, which makes an excellent base camp.

A short distance northeast, we drove under a high railroad trestle and in about a tenth of a mile the road disappeared!

Salt Creek Wash is a main drainage channel and it was quite apparent that volumes of water had recently roared down its course. The wash had considerably widened and former landmarks were erased.

Exploring four-wheelers and dune buggies had marked a trail through the sandy sections. We kept to the gravelly ground which still had a slight crust on it. In doing so, we were following along the eastern edge of the wash and missed the turn-off into the canyon (unnamed on the topographical map of the region)—2.1 miles from the trestle. We were also unable to locate the ruins of Canyon Spring Stage Station. We either missed them or they had been washed away by the torrents of water which had severely scoured out the area.

Turning around, we headed for the distinctive hill marking the entrance to the canyon which contains the spring and the bloodstone deposits. The road was quite passable once we were out of Salt Creek Wash.

The drive up the canyon is a trip into a geological fairyland. Erosion has carved out an array of colorful sandstone formations which rise directly from the gravel-bottomed wash. It takes only a small amount of imagination to see Disneyland characters as you drive through the narrow passageways between them.

Of particular interest are the several fine exposures of ripple marks. They seem to indicate that the sandstone was originally deposited in a prehistoric lake; com-

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pacted, uplifted and tilted by mighty geological forces.

The canyon branches .7 of a mile from Salt Creek Wash. This area is a good campsite for four-wheelers. Collecting begins at this point and the bloodstone will be found intermittently throughout the area.

Jerry and I continued up the left branch for another .4 of a mile where we spotted a fine outcrop of bloodstone on the right-hand side of the road. This location is marked on the map.

I worked on a seam in the hillside while Jerry scouted the area. He reported material could be found in numerous locations in the dark horizon. I had carefully followed the seam and the first specimens seemed a bit granular but the material improved as I dug deeper. Jerry returned to help me with my project and we were rewarded with several good specimens which should cut into beautiful cabochons.

What is bloodstone? Definitions will vary. However, Dana—The Authority—states heliotrope, or bloodstone, is a type of chalcedony or plasma, usually with a uniform green or grayish-green color, sub-

translucent to opaque, that contains red spots of iron-oxide or red jasper resembling spots of blood.

The Canyon Spring material fits this description. It has good, green color and specimens with "splotches" of red are to be found. Specimens containing "spots of red" are not common but they do occur here.

Do not expect to find unlimited amounts of top quality gem material at this location. The fact that it requires hard digging and a bit of luck is why this area is still open to collecting. Had good material been easily available this deposit would have been under claim long ago.

Returning down the canyon we stopped to photograph Canyon Spring—a tiny, clear pool in an extremely arid region. I can only hope the writing of this article will not result in any vandalism of the spring. But then, perhaps, I needn't worry. Four-wheelers, dune buggy enthusiasts and rockhounds love and respect the desert back country. I feel sure they will do their part in helping to protect the desert's ecology. Salt Creek Wash and Canyon Spring will remain as we left it—an uncluttered refuge for the desert explorer. □

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*Some of the canyons in the Mecca Hills (left) are just wide enough to allow entry. George Service (below) serves his passengers lunch from his specially designed chuck wagon.*

## FLORA, FAUNA, AND 4-WHEELS

*Continued from Page 19*

Andreas earthquake fault line appears. (Don't get shook—you are safer there than in Los Angeles since there is nothing to fall on you in case the earth trembles.)

Trips also include exploration of Hidden Spring and its wild palm oasis and the Grotto, a cave once used by prehistoric Indians. En route to these points of inter-

est on a recent trip we drove through washes and canyons where smoke trees, palo verde trees and a myriad of desert plants somehow survive in the arid wilderness.

Having explored the back country of Southern California for many years and thus being familiar with the deserts and mountains, Service can schedule his trips into those areas which will be of interest to his passengers.

Rockhounds are taken into gem hunting areas such as the Orocopia Mountains, Wiley Well areas, Turtle Mountains or other prime collecting locations. For those who want to visit old mines and relive the past, a trip into the Dale Mining District is scheduled.

Photographers usually want to go to areas where there are colorful desert wildflowers such as the Anza-Borrego State Park where the best selection of plant life is in the washes, most of which can only be reached by four-wheel-drive.

Photographers and writers from national and western publications and scientists doing desert research also rely on the services of Desert Expeditions.

Service's two new Chevrolet Blazers are fully equipped with two-way radios, air conditioning and special seats for the comfort of his passengers. For those who like the open air, he has equipped one of the Blazers with a soft top which gives greater viewing through the large windows, or which can be completely removed.

Regardless of whether it is a half-day trip or an excursion of several days, Service pulls his special trailer which contains overnight camping equipment, water, ice chests and a complete chuck wagon.

George Service and his associate, Jim Davis, are not only veteran back country drivers, they are also well versed in geology and biology and are thus a source of information during the tours.

Whether you go on a guided tour or have your own four-wheel-drive equipment, you will find a back country trip into the wilderness areas around Palm Desert will be a new world of nature and adventure. □

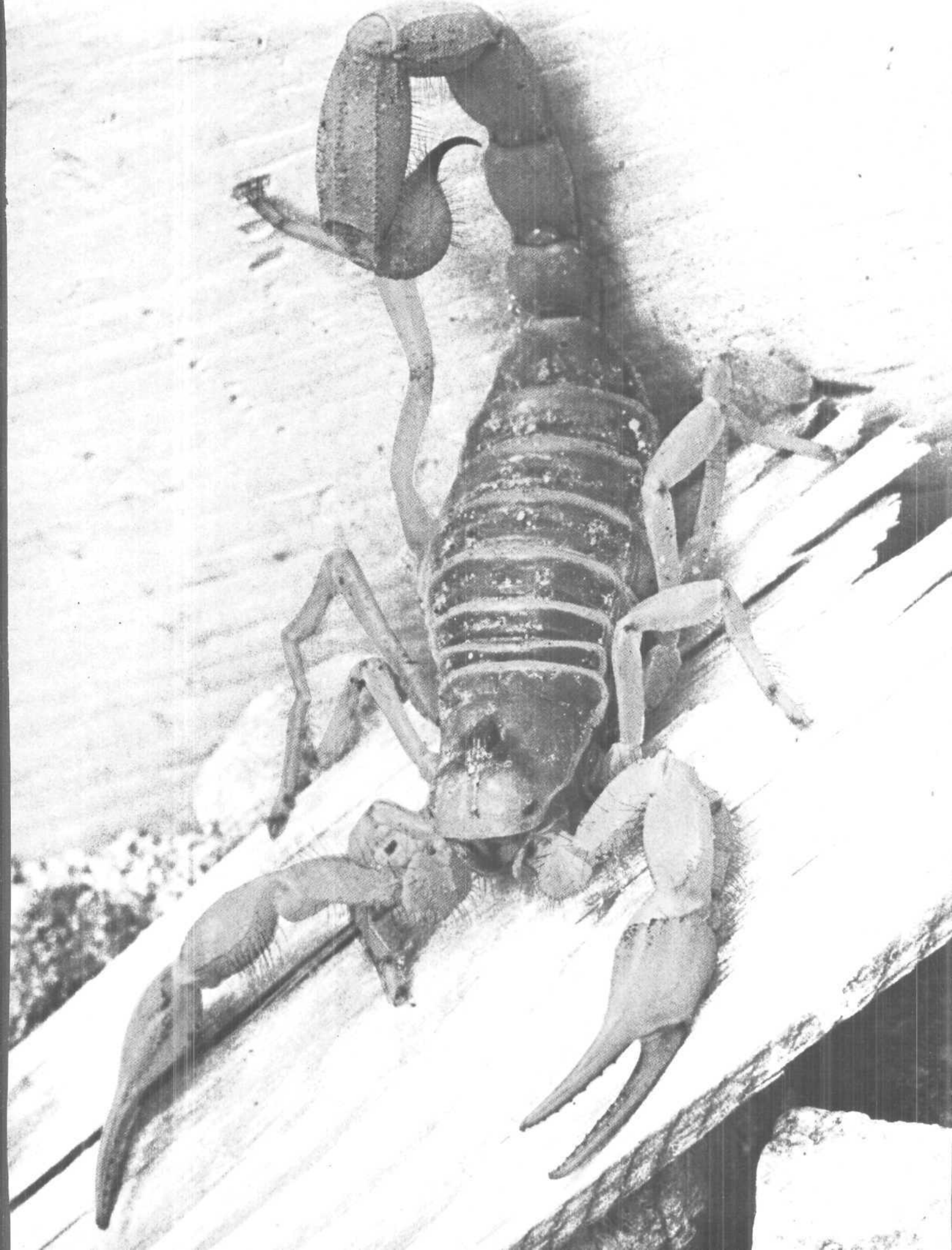


# Desert Life

by Hans Baerwald

Scorpions are desert dwellers that should be avoided. Their tails contain poison which is extremely painful and, in some cases fatal, especially to small children. Note the stinger in this close-up by Hans Baerwald.





# Deep Canyon's Desert World

by Jack Pepper

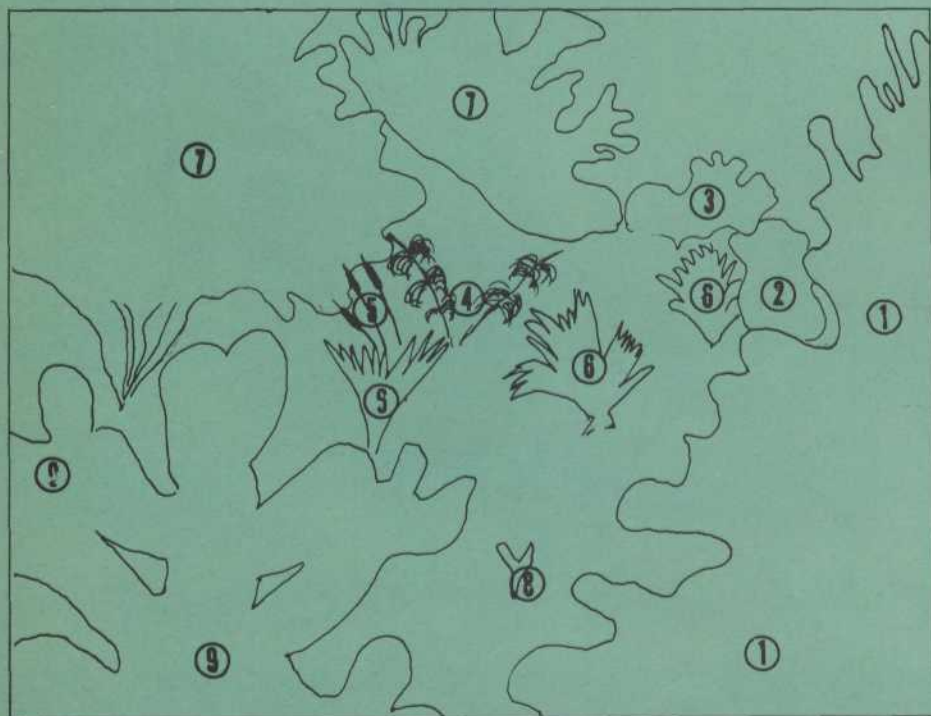
**W**INDING THROUGH the Santa Rosa Mountains of Southern California's Riverside County, the Palms to Pines Highway descends 6,000 feet from the resort community of Idyllwild to Palm Desert, nestled against the foot of the mountains only 200 feet above sea level.

Along U.S. Highway 74—recently designated a California State Scenic Route—is a vista point 2,000 feet above the valley floor offering a panoramic view of the Salton Sea and Mexico to the southwest

and on the eastern horizon the Little San Bernardino Mountains with sprawling Coachella Valley and Palm Desert in the foreground.

Directly below the vantage point can be seen Deep Canyon, once a hunting grounds for prehistoric Indians and today an observing grounds providing biologists, nature buffs and families with a first-hand and capsule view of desert animals, plants, shrubs and flowers.

Located on the alluvial fan between the



Nine of the dozens of desert plants at The Oasis and along the Nature Trail of the Living Desert Reserve are shown in the color photograph and identified in the outline above: 1 Sandpaper Plant, 2 Cheeseweed, 3 Creosote Bush, 4 Arrowweed, 5 Cat Tails, 6 Fan Palm, 7 Palo Verde, 8 Silver Cholla, and 9 Teddy Bear Cholla.











*Dr. R. B. Cowles, University of California biologist, and Deana Turner (above) examine a specimen of mistletoe whose seeds are carried by the *Phainopepla*. Karen Fowler, resident naturalist of the Living Desert Museum, and her husband, George, (below) inspect a pool at the Nature Trail.*



mountain cliffs of Deep Canyon are The Living Desert Rerserve and the Philip L. Boyd Desert Research Center, the latter of which is administered by the University of California at Riverside and hosts scientists from throughout the world.

Due to long range experiments and thus the need to keep the Research Center (located several miles up the canyon from the Living Reserve) in a pristine state for ecological research, the complex is fenced off and the entrance locked. However, arrangements can be made by hikers, artists, photographers and other interested persons to enter the area.

Results of the continuing experiments and projects of the Research Center are graphically presented at the public-oriented Living Desert which is open every day from 9 A.M. to 5 P.M. EXCEPT Mon-



*Habits of the majestic bighorn sheep are studied at Desert Research Center.*

days. Here can be seen how desert plants and animals survive under extreme climatic conditions—conditions under which *Homo sapiens* would not last for very long.

Before describing the operations of the two complexes, let's first examine Deep Canyon in relation to other desert areas in the Southwest and see why it is so important from an ecological standpoint.

Consisting of approximately 120,000 square miles, the Sonoran Desert includes portions of Sonora (Mexico), southern Arizona, southeastern California and the northeastern part of Baja (Mexico) California. One of the six major divisions of the Sonoran is the Colorado Desert which extends from the Mojave Desert (a higher arid region) on the north into Mexico and is bordered on both sides by mountain ranges. An inland desert, it is mostly at or slightly above sea level. Within this Colorado Desert are Coachella and Im-

perial Valleys and Deep Canyon.

From its source at 7,500 feet elevation in the Santa Rosa Mountains, Deep Canyon plunges down between sheer cliffs for eight miles until it forms the alluvial fan at the mouth of the canyon. It is in this area the ecological studies are conducted. Their importance is described in R. Mark Ryan's fascinating book *Mammals of Deep Canyon*. (See Page 2.)

"The Colorado Desert of Southern California is an especially suitable region to study the ecology of arid land inhabitants. Results of studies in desert ecology are particularly meaningful in such a region. Because the most severe drought conditions exist there, the extremes of environment and specialized adaption have already been reached.

"The Colorado Desert is considered representative of a "true" desert climate and is the only one in the North American continent similar to other deserts around the world. Results of ecological studies performed in the Colorado Desert, therefore, can be compared to those of similar studies in the major deserts of South America, Australia, Asia, the Middle East and Africa.

"Immediately in the vicinity of Deep Canyon are a number of distinct habitats that are distributed within three vertical life zones from below sea level up to

*One of the recent international visitors to the research center was Hubert Saint Girons, Professor of Biology from Paris, France. He is using a snare for capturing lizards for comparison with similar European specimens.*



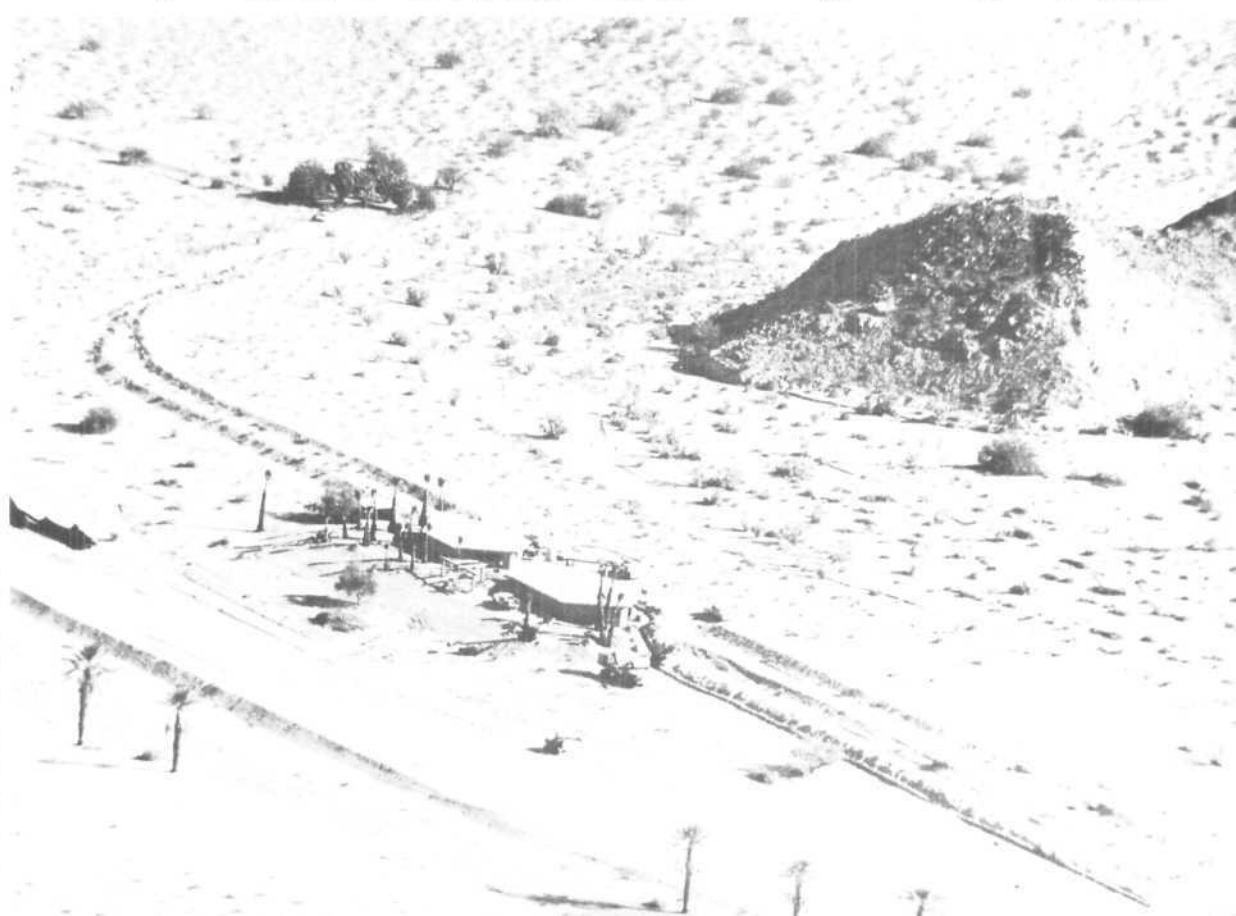
10,000 feet elevation . . . The native mammals within these habitats form an important segment of the vertebrate community, as they do in similar regions throughout the world.

"The mammals inhabiting the Deep Canyon area are herbivorous, carnivorous or insectivorous in diet. They include large ungulates (hoofed animals) to small rodents. Their habits are fossorial (burrowing), saltatorial (hopping), terrestrial, arboreal, or volant (flying). They are

both diurnal and nocturnal in activity, and they respond to the extremes of the desert environment by seasonal hibernation, estivation or migration.

"In other words, the mammals of Deep Canyon are widely diversified, both in populations and numbers of species, in all life zones and in the various habitats of the area. Forty species of wild mammals are now recorded there and probably another 11 species are present."

The vegetation of Deep Canyon ranges



*Aerial view of the Living Desert Reserve's two main buildings with start of the Nature Trail and hiking area in the background. Expansion of the facilities is currently in progress.*



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from a forest of pinyons and junipers at the upper borders to creosote brush scrub of the floodplain. There are nine species of cacti, the most prominent of which are the beavertail, the "jumping" cholla and the barrel cactus.

Other plants of the hills are the ocotillo, quickly turning green after rains and then dropping its leaves for the dry spells; the desert agave whose sprouting flower stems look like giant asparagus and are relished by bighorn sheep. Conspicuous plants of the washes are the smoke tree, palo verde and desert willow. There are also groups of palm trees.

Prominent among the migratory birds are the phainopepla, which nests in the palo verde trees and gorges itself on the berries of the mistletoe parasiting those trees, the white-crowned sparrow, the western blue bird and Costa's hummingbird. Residents includes the Gambel quail, linnet, golden eagle, loggerhead shrike and mockingbird.

As in other parts of the desert, there is also a wide variety of lizards and snakes.

The vegetation, birds and lizards and some of the mammals described above can be seen daily at the Living Desert Reserve which is located at the mouth of Deep Canyon at the pavement end of South Portal, only a few miles from Palm Desert. As its name implies, the Reserve is not a museum with static displays, but rather an outdoor adventure in the Colorado Desert.

Less than a year ago the site of The Liv-



ing Desert Reserve was a small "Nature Trail" which had been neglected and the signs partially destroyed by vandals. Realizing a need for an area where families could see the "living desert" under controlled conditions, civic leaders formed a non-profit membership organization called the Living Desert Association which is a division of the Palm Springs Desert Museum.

As soon as donations from members started coming in the group obtained the full-time services of Karen Sausman as Resident Naturalist and began construction of two buildings, the plans for which



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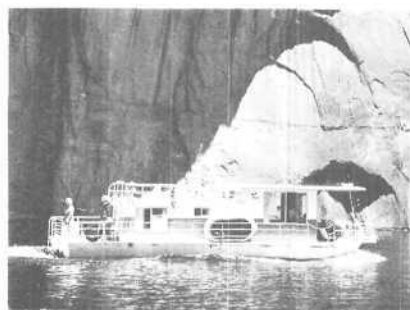
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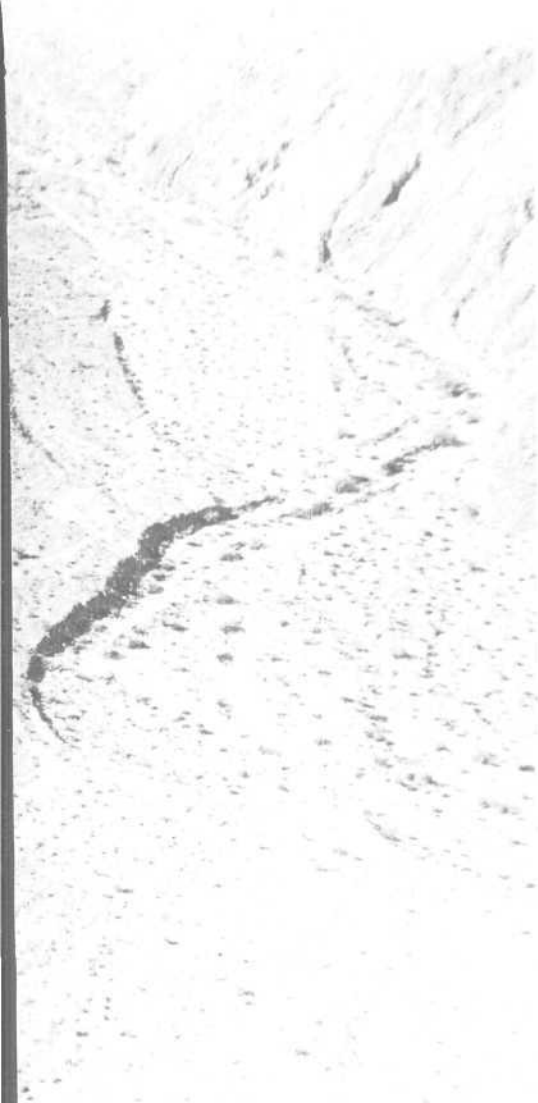
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*Aerial view of Deep Canyon showing the buildings of the University of California Research Center.*

sity of California on condition it would always be kept in its natural state for biological research.

Since then the area has gradually been developed with experiments and projects added each year. In 1962 an air-conditioned building containing living quarters and a research laboratory was opened.

Among current studies being conducted are those pertaining to bighorn sheep, desert ground squirrels, an insect survey and migratory habits of the mammals and birds of the area. It is one of the few research centers in the United States where biologists can study animals and examine plants in their natural state rather than in a laboratory under limited conditions.

As stated before, the Desert Research Center is restricted due to the need to protect the experiments. However, visits can be arranged by interested groups or individuals by writing to: Control Committee, Boyd Desert Research Center, Department of Biology, University of California, Riverside, California.

However, The Living Desert Reserve is the place to go for those interested in obtaining a first-hand and capsule view of desert animals and plants. Here the fascinating life of Deep Canyon—and therefore deserts throughout the world—is explained so we can appreciate and thus respect our "living desert." ☐

were donated by John Outcault, Palm Desert architect. Within a few months Miss Sausman (now Mrs. George Fowler) had restored the Nature Trail, added several miles of hiking trails and supervised the construction of the buildings.

Formal dedication of the new Living Desert Reserve and opening of the two buildings is scheduled for the end of January. The buildings house a lecture and exhibit hall, office and library space, workshop areas and quarters for a grounds superintendent in addition to the entrance and information center.

Visitors to the Reserve during the next few months should realize all of this has been accomplished within one year and that the complex is still in its first stages of development. Plans call for a larger desert garden, additional hiking trails, shade and information ramadas and live dioramas to present the animals and plants of Deep Canyon.

Recognizing the importance of Deep Canyon as an ecological study theater, the Desert Research Center was started in 1958 after philanthropist Philip L. Boyd donated the original land to the Univer-

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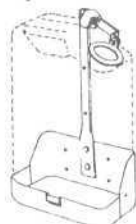
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FEBRUARY 12 & 13, PENINSULA BOTTLE COLLECTORS 3rd annual antique bottle show and sale, San Mateo County Fairgrounds. Write P. O. Box 886, Belmont, Calif. 94002.

FEBRUARY 12-13, FIESTA OF GEMS. Community Center, 2197 Chase Drive, Rancho Cordova, Calif. Free admission. Gem and mineral displays, dealers, snack bar, grab bags, prizes, working and teaching displays. Ample parking, picnic tables.

FEBRUARY 17-19, WESTERN WORLD OF GEMS, sponsored by the Scottsdale Rock Club, Scottsdale, Arizona. Free parking and admission. Write Frank Birtiel, 6338 East Osborn Rd., Scottsdale, Arizona 85251.

FEBRUARY 18-21, SECOND ANNUAL GEM, ROCK AND HOBBY SHOW, at Palo Verde Improvement Association on Clark Way, Palo Verde, 20 miles southwest of Blythe on Highway 78. Tailgaters, food, field trips. Information: P.V.I.A., Box 95, Palo Verde, Calif. 92266.

FEBRUARY 19 & 20, SAN FERNANDO VALLEY GEM & MINERAL SHOW sponsored by six clubs in the area. Special exhibits, donation prizes, dealers. Write C. L. Osburn, 5052 Campo Rd., Woodland Hills, CA 91364.

FEBRUARY 24-27, LA FIESTA DE LOS VAQUEROS, 45th Annual Tucson Rodeo and Parade, Tucson, Arizona. See article in this issue re details.

FEBRUARY 26 & 27, THIRD ANNUAL BOTTLE SHOW AND SALE sponsored by the Antique Bottle Club of Orange County. Retail Clerks Union Hall, 8530 Stanton Avenue, Buena Park, Calif. Admission 50 cents, children

*This column is a public service and there is no charge for listing your event or meeting—so take advantage of the space by sending in your announcement. However, we must receive the information at least three months prior to the event. Be certain to furnish complete details.*

free. Write Box 10424, Santa Ana, CA 92711.

FEBRUARY 26-27, NATURE'S ARTISTRY, Santa Clara Valley Gem & Mineral Society, at Santa Clara County fairgrounds, 344 Tully Road, San Jose, Calif. Donation of 50c for adults, children under 12 free when accompanied by adult. Earth Science movies and lapidary, rock swap, dealers.

FEBRUARY 27, SIERRA TREASURE HUNTING CLUB'S 4th annual Mother Lode Rally. Family affair for 4WD and back country vehicles around Georgetown, Calif. Write Terry Walker, 4257 Avila Lane, Sacramento, Calif. 95825.

MARCH 5-12, IMPERIAL VALLEY GEM AND MINERAL SOCIETY'S 25th annual show at the California Mid-Winter Fair, Imperial, California.

MARCH 4 & 5, MARCH OF GEMS sponsored by the Los Angeles Lapidary Society, Liberal Arts Masonic Temple, 2244 Westwood Blvd., 32nd annual event. Free parking and admission. Jewelry, rocks, gems, fossils, minerals. Demonstrations and lectures. Guest exhibits. Write Los Angeles Lapidary Society, 2517 Federal Avenue, Los Angeles, California 90064.

MARCH 11 & 12, SPRING PARADE OF GEMS sponsored by the Needles Gem and Mineral Club, High School Gymnasium, Needles, Calif. Admission free. Field trips, door prizes, bottle exhibits. Write Ruth Brooks, P. O. Box 726, Needles, Calif. 92363.

MARCH 25 & 26, A WEEKEND IN GEM-LAND sponsored by the Northrop Recreation Gem and Mineral Club, Northrop Recreation Club House, 12329 South Crenshaw Blvd., Hawthorne, Calif. Free parking and admission. Write Bill Nary, 17210 Spinning Ave., Torrance, Calif. 90504.

MARCH 25 & 26, NINTH ANNUAL BOTTLE SHOW & WORKSHOP, sponsored by Bishop Belles and Beaux Bottle Club, Tri-County Fairgrounds, Bishop, Calif. Write P. O. Box 1475 Bishop, Calif. 93514.

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# ARIZONA'S BULL RUN

by Janice Beaty

ARIZONA AND California were distant outposts belonging to the Republic of Mexico during the Mexican War in 1846. Yet their scattered settlers numbered nearly as many Americans as Mexicans. In order to protect its own, the United States authorized a battalion of Mormon soldiers to march from Santa Fe, New Mexico, across Arizona to California, putting down any Mexican opposition it might meet.

In 1846, Lieutenant Colonel Philip St. George Cooke led this Mormon Battalion on its renowned 1,100-mile trek to San Diego in 102 days. They literally hewed out the Southwest's first wagon road as they went, conquering nearly insurmountable obstacles. Yet their only

major battle was not against Mexicans, but bulls!

As their wagons rumbled through Arizona's San Pedro Valley, a huge herd of wild bulls gathered directly across their line of march. A few of the animals were frightened away as the wagons approached, but most advanced snorting and pawing, torn between curiosity and fear.

The troopers were itching for a battle—any kind of battle. Though the Colonel had ordered against it, every man had his musket loaded. No doubt they expected a single volley would drive the beasts away.

Instead, when the men opened fire the animals charged, turning the orderly march into a melee. Weapons were reloaded and fired again . . . to no avail. Wounded or not, the bulls charged again and again, tossing mules on their horns, battering in wagons and trampling many a luckless soldier.

Some of the men mounted wagon wheels to pour a deadly hail of musket balls into the enemy's ranks. Others fought from the ground, throwing themselves flat when the bulls charged. There was no other cover but an occasional mesquite bush which the men could duck behind to reload.

The bloody battle lasted from early morning until noon. A dozen or more men were wounded and sixty to eighty bulls killed outright before the thundering herd suddenly wheeled away and disappeared in a cloud of dust. □



*A plaque honoring the famed Mormon Battalion stands beside a road in Arizona's Gila Valley.*



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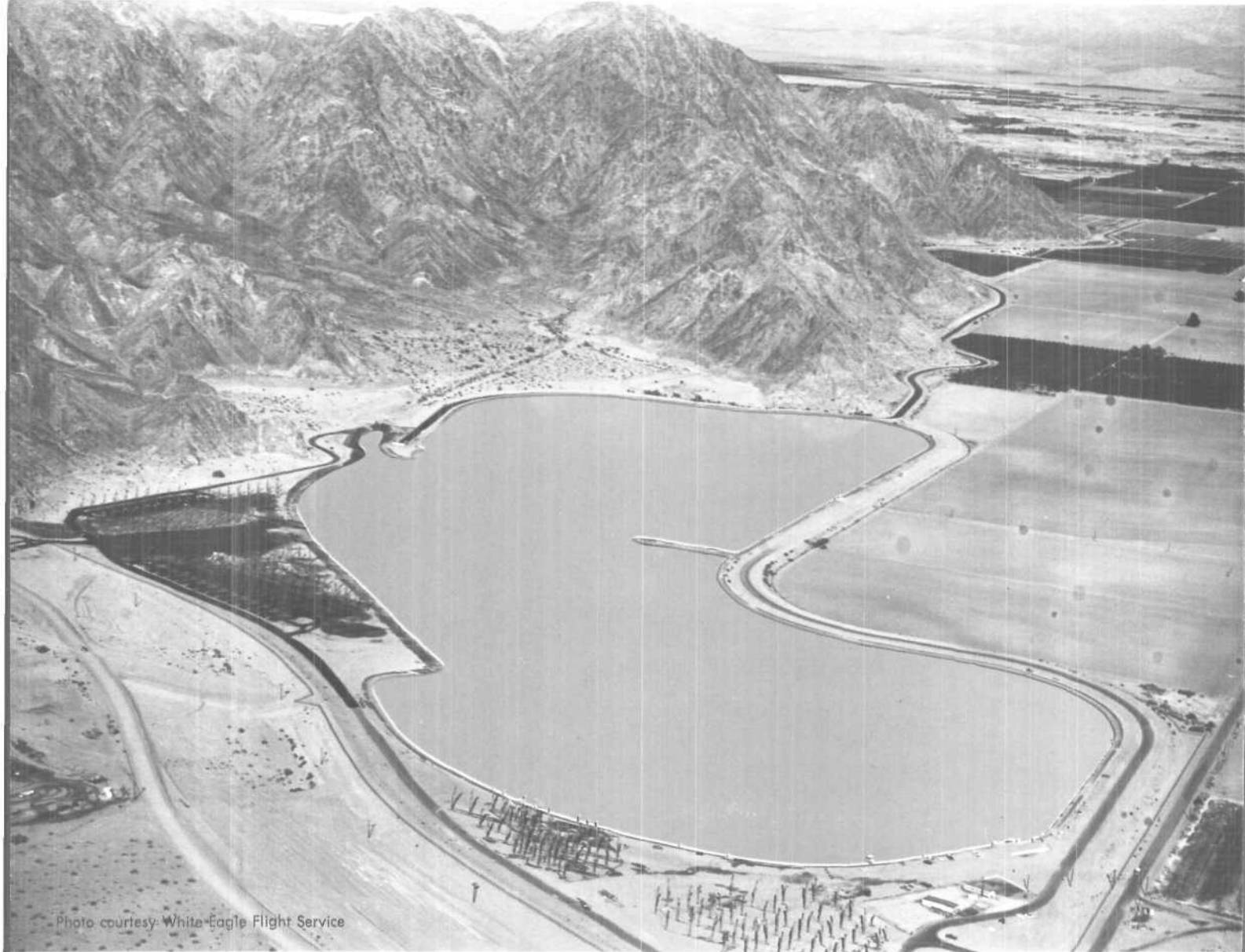


Photo courtesy: White Eagle Flight Service

# LAKE CAHUILLA...

## Modern Recreation at an Ancient Site

by Jack Sheppard

**N**AMED AFTER ancient Lake Cahuilla, a vast expanse of fresh water which was at least three times larger than the present Salton Sea, Riverside County's newest recreation area will officially be dedicated this month.

Although not nearly as large as the prehistoric waters, Lake Cahuilla offers outdoor recreation for families from nearby communities and others visiting Coachella Valley.

Both lakes were named after the peaceful Cahuilla Indians (pronounced Kaw-wee-yah) who lived, hunted and fished along the shores of the ancient lake many years before the white man arrived. Descendants of the early-day Indians still live in Coachella Valley and are active in civic and community affairs.

The dedication and official opening was

a culmination of years of planning and co-operation between the Coachella Valley County Water District and the Riverside County Parks Department.

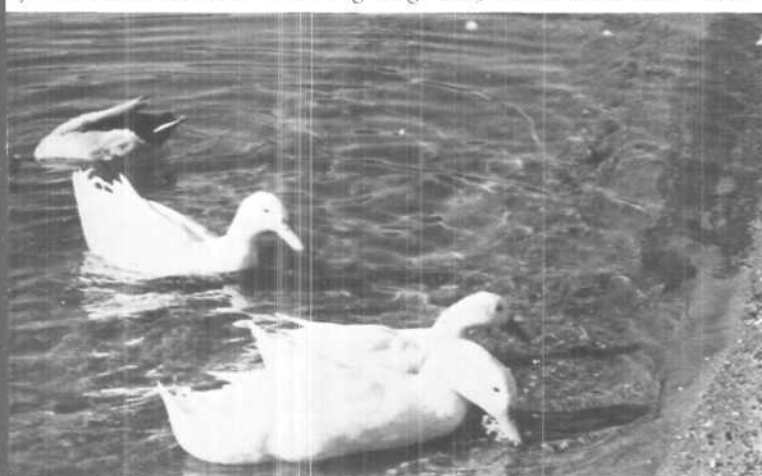
The Coachella Valley Canal, which brings water into the valley from the Colorado River 123 miles away, ends at the western side of the lake and will keep it filled the year-round, under supervision of the Water District. The Parks Department will operate and maintain the area.

Nestled against the picturesque Santa Rosa Mountains, the lake is kidney-shaped and is three-fourths of a mile long and about half that size in width. There are five and a quarter miles of shoreline.

Although the dedication was this month, it has been open to fishermen for the past year who find little difficulty in catching their limit of five trout. The



*Nestled against the Santa Rosa Mountains, newly formed Lake Cabuilla is Riverside County's newest recreation area. Hollis Charleboix, with his dog, Sam, displays a good trout catch . . . fishermen can drive to the shore and relax . . . Eileen Workman feeds ducks between watching migratory birds with binoculars.*



trout are planted in the lake at various times from the Mojave Hatchery.

Anglers also catch catfish and bass from the shores of the lake. In addition to fishing from the shore, anglers can rent row boats at the marina. There is also a launching area for privately owned boats. No gasoline motor boats, however, will be allowed on the lake. It is also too small for water skiing.

On the west side of the lake is located the entrance, snack bar, rest rooms and picnic facilities. Near the entrance is the bathing beach and children's playground.

No overnight camping is allowed within the park.

However, a Yogi Bear Jellystone Park Campgrounds will soon be constructed on a 140-acre site immediately adjacent to the park. The campgrounds will have all the modern facilities for campers and trailers and eventually will have 300 pads. In addition to other recreational facilities it will also have horses for rent for those who want to ride through the nearby scenic canyons.

Other future plans call for hiking trails and additional picnic facilities along the

dikes, according to Peter Dangermond, Riverside County Parks Director.

The lake can be reached by taking Jefferson Street south from State 111 between Palm Desert and Indio. While en route to the lake look along the base of the Santa Rosa Mountains and you will see what was once the shoreline of ancient Lake Cabuilla.

So for a pleasant day's outing—whether it be fishing, hiking, picnicking or riding—you will find Riverside County's new recreational Lake Cabuilla has something to offer everyone in the family. □





# The Kangaroo Rat

by K. L. Boynton

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FROM THE artistic standpoint, a kangaroo rat may look as if somebody was being funny in the design department, or that a big mistake occurred on the assembly line and the wrong parts were put together. Certainly its head appears to be too large for its body.

It has no immediately discernible neck and its forelimbs are puny, its hind ones outsized, and its big feet look like misplaced satchels. The wrong tail was stuck on, quite obviously, for it is considerably longer than the body and the tuft of hair at the end makes an already too long tail look even sillier.



*Nature provides a protection for the kangaroo rat who blends into the desert landscape as shown by the color photo of the rodent provided by Naturalist Jim Davis and photographed by George Service.*

But zoologists regard these plump little offbeat rodents as examples of a first class job of engineering. Their studies show that although odd, these proportions are structurally very sound indeed. Further, they are part of the equipment that puts kangaroo rats among the most successful citizens of the arid Southwest.

Kangaroo rats come in a wide assortment of kinds and sizes. While all follow the tribal pattern in appearance, they differ considerably in temperament and specific ways of dealing with desert conditions. Merriam's kangaroo rat (*Dipodomys merriami*), the hero of this piece, is a small one. He measures only some nine inches overall, about five inches of which is tail. But among his various cousins, this little fellow is perhaps the most highly adapted to arid living, flourishing even in the lowest, driest and hottest sections of the desert. As such, he is of particular interest to scientists.

Now "Dipo" is a seed eater who does his grocerying at night. He spends the day holed up in his simple burrow (a main tunnel with a couple of side exits located generally under a mesquite or cactus and containing an enlarged nest chamber with a bed of grama grass or plantain) which he keeps neat as a pin. He sidesteps the worst of the high temperatures of his desert environment by avoiding the sunny hours. Well below the surface, his burrow stays a cool 75-88 degrees with a comfortable 30-50 percent humidity, even when the air temperature outside hits 95 degrees and the soil surface itself may be as hot as 140 degrees. Along about dusk, when the desert begins to cool enough for a fellow to work in, he unplugs his entrance and quite literally hops to it.

Dipo is built for getting about mainly

on his hind legs, progressing in a series of leaps, kangaroo style. At a leisurely pace, this is a hop with his two big hind feet landing together, then kicking him forward again to land some two to three feet away. But when the panic button is pushed the hops accelerate into a wild series of rebounds, ricocheting him over the desert, his hind feet striking the ground synchronously, his forefeet not at all. This peculiar action is entirely different from the jack rabbit's getaway spring, where the front feet first touch the ground, and the hind ones, overshooting the front ones at highest speed, come down next to lift the body forward again.

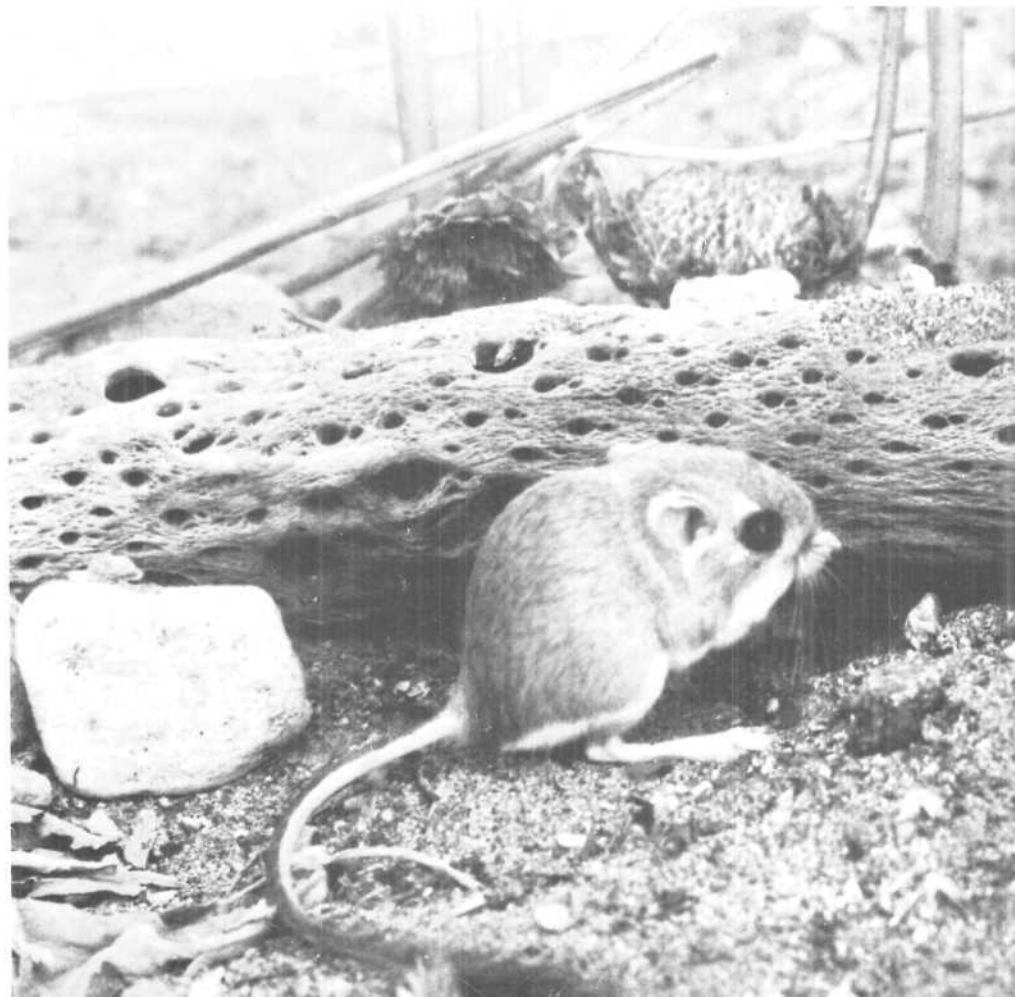
Since Dipo's hind legs do it all, they need special designing. Hence they are proportionately very long, geared mechanically for greater lifting power, and endowed with super muscles for tremendous kick-off action. His feet are his launching platforms. Hence they are big and flat, his toes extremely long to give that final impulse for the leap.

In fact, adjustments that had to be made all up and down the body to achieve this bipedal jumping are what caused the strange proportions, as Hatt's fine anatomical work on ricochettal rodents and

Howell's detailed study of kangaroo rat anatomy showed.

Shortening the neck, for instance, helps hold the front end of the body up off the ground by shifting the center of gravity backward, a big advantage when propulsion comes from the rear. A short neck also controls head movement better, keeping it from bobbing and jerking in the sudden forward thrust. The elastic arch of his backbone is subject to great strain in ricochet action, so it is strengthened and supported, even trussed up to an astonishing degree by muscles and ligaments. Shock absorbers are even installed here and there to take the force of each landing.

And—it seems—Dipo did get the right tail, after all. One with extra vertebrae to make it very long is what is needed, first to counterbalance the weight of the front end of his body, and second to serve as a highly efficient rudder to steer the angle of his leaping. Tail action corrects errors in take off, and makes possible quick changes in direction. Even the way the hairs grow on the tail is important. Laid on in horizontal vanes, they give additional trajectory control, the tuft at the end here playing a very important role.



*The Kangaroo Rat's tail is an inch longer than its body and serves many purposes. He spends the day in a hole and looks for seeds at night.  
Photo by George Fowler.*



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*Within a few seconds after  
this photograph was taken the  
little rodent had completely  
buried himself in the sand  
for protection from predators.  
Photo by George Service.*

With a jumping setup like this, no wonder Dipo is the despair of coyotes. Who can catch something like this that takes off in prodigious leaps in a wild unpredictable course of zigs when you expect it to zag, changing direction with each landing? To be sure, mechanically speaking, ricochetting is wasteful of energy. It requires big lifts of the body, even loses some momentum on landing that should be carried to the next stride. But to Dipo, high speed sustained for a short period, is what counts in escaping pursuing enemies. Ricochetting delivers it best of all, plus the ability to make those marvelous dodges for which the kangaroo rat is so famous.

And his head? Well, it is large for so small an animal, but still not as big as it looks. Much of its bulk turns out not to be skull at all but bulging outside pockets located in his cheeks to the east and west of his mouth. Voluminous and expandable, they extend well down into his shoulders. It is into these fur-lined market baskets that Dipo stuffs his groceries to be carted home to eat, or carried to small underground caches.

Zoologist Reynolds' study on Merriam's kangaroo rats in a typical creosote desert region some 30 miles south of Tucson, produced details on food preferences there. Active here the year around, Dipo and his kind depend on a plentiful crop of seeds, and pouch analysis showed that some different kinds were eaten. Grass seeds are taken most, forbs second, shrub seeds third. Spring annuals are eaten during the spring seeding period, perennial grasses almost exclusively in later summer after seed maturation. Cacti are a very important source of food, for these plants retain their fruits, dropping them from time to time and thus their seeds are available over a longer period.

In spite of his long legs, Dipo is so short he can't reach up higher than about six inches even stretching, and he is absolutely no climber. Hence, *Opuntia* and tall plant seeds are harvested on the ground. Interesting enough, Dipo has a



passion for mesquite beans which he can't have until they fall, unless some white-throated woodrat happens to be around and while climbing for his own dinner cuts off some bean pods which drop to the ground.

Dipo can't afford to dally about when feeding. Abroad in the night are owls who come on silent wings, kit foxes who hunt quietly by stealth, and snakes who lie waiting. He's got to search for and find the seeds, husk them (thus saving space in his grocery bags), or wad them in unhusked and hence end up with less food per trip. Every minute he's out of his burrow he's in danger, every trip adds to his chances of being caught.

While the Arizona Dipos woo at any time of the year, Reynolds found there are two main peaks of activity along this line, coinciding with the new vegetative growth spring and late summer. He suspects that maybe the nutrients in fresh vegetables increase ovulation and hence interests in family raising. Finding it hard to check into the domestic affairs of these rodents in the field, he collected a batch of pregnant females, and installing them in comfortable quarters in his laboratory, awaited the forthcoming blessed events.

The standard batch seems to consist of one to three youngsters which arrive in the world very pink and hairless except for their nose whiskers which are already



some four to six mm long. Their eyes are closed and they are quite helpless. By the fourth day they begin to get their fur, and by the eighth have a good covering. About now their front teeth start coming in. Wholly dependent on their mothers for about two weeks for food and protection, they begin to eat solid food at 10 days but continue to nurse until they are about three weeks old. Their eyes are fully open at 17 days, and their market baskets, which are only folds of skin at birth, gradually deepen and are first used for seed carrying when the youngsters are about 18 days old. Growing up takes time. The young kangaroo rats do not reach full body length and weight until they are about five months old.

Dipo needs no water, maintaining excellent health entirely on a diet of dry seeds. Indeed, kangaroo rats working for Zoologist Lidicker were hale and hearty after a seven-year menu of dry seeds and grain only. Able to manufacture water metabolically, Dipo is also a great little conserver of what he does have. He uses little moisture for heat regulation since he spends the day in his burrow. A small pocket of air accumulates around his nose when he tucks it in his fur, thus little is lost in respiration. Thanks to a complicated but highly efficient kidney setup, he excretes a highly concentrated urine.

So in addition to remarkably good

structural engineering, the kangaroo rats have a practical interior design especially pertinent to arid land living. They ought to have, come to think of it, for these strange rodents—not rats at all by the way but members of the *Heteromyidae* family which is part of the squirrel tribe—are old hands at the desert game.

As long as 35 million years ago a couple of primitive *Heteromyids* were around, and one of these gave rise to the probable direct ancestor of kangaroo rats and pocket mice. This old charmer, one *Mookomys* by name, was well established by 15 to 20 million years ago, and from his time on there was a rapid diversification among *heteromyids*. Carpenter, pointing to the fact that an increasing amount of desert land was being formed during this time (when mountains were being built in western U.S. and Mexico) suggests that the kangaroo rats' low evaporative losses and low water requirements quite likely evolved in response to this increasing aridity.

Hence the tribe was already preadapted, and had a head start for arid living. The ability to get along even better without water by increasing the capacity for urine concentration evolved in the more specialized forms—such as *Dipodomys merriami*. Concentrating on a dry seed diet, his kind was able to invade and live successfully in the most forbidding of deserts.

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# VERBOTEN!

Continued from Page 17

little nuggets seemed to bear out her description of the mining method used. Beyond that, he couldn't help much.

After what seemed like years, I was finally ready for the first real trek into the Santa Rosas—and I was stopped cold before I had begun to even pick up speed—which proved a sore shock to my prospecting vanity!

In the geologic past, the mountains must have been terrifically high and steep; and the subsequent erosion has wrapped the whole "knee" zone of the range with miles-wide *bajadas*—or alluvial fans—so overlapped that they make one single, solid barrier. Because of the steep pitch of the *bajadas*, they are criss-crossed with vicious little gullies.

To make it worse, they are so closely frosted with boulders—of watermelon to truck size—that it is impossible to cross them with any kind of four-wheel-drive vehicle. It is strictly mule and bootleather country; and the average pitch of the topography back of the *bajadas* is about a 1,000 feet to the mile—and sometimes twice that. And, to my surprise, I found there are only two canyons on the whole east side of the range in which you can sometimes drive a 4x4 into the mountains proper: Wonderstone Wash in the south, and Martinez Canyon in the north.

From the pavement the mountains look so close it seems impossible they could be so isolated; yet late one evening on a high ridge I once saw a bedded-down herd of desert bighorns on my left, and down below in the clear air I could easily make out the glow of the amber running lights of the big trucks on Highway 86 going to and from the Imperial Valley.

The rugged terrain was only the first of the one-two-three punches of the Santa Rosas. The mountains stand up into the prevailing north-west winds that sweep across the Morongo Valley pass, and you best be prepared for any kind of weather or wind up there. I have actually been knocked off my feet by a sudden gust that hit without warning on a high ridge. And I'm still troubled by three frost bitten fingers suffered in a sudden blizzard at 6,000 feet that blew out of the Laguna Mountains to the west, when I lost my gloves and had to dig brush out of the snow to

keep a fire going while I waited for daylight.

The most potent of the punches is the water problem—there just *isn't* enough; and what few water seeps that do exist are often alkali. There is one little spring in the south end of the range that is so strong that coffee made from the water will curdle canned milk poured into it!

The waybill calls for a little oasis of 14 or 15 palms, three natural rock tanks, a streak of white rock in a limestone area, two large Sabine pines (red cedar) at the head of a wide wash, and a large white "sentinel rock" near the vein—and they are all there in the Santa Rosas! But, like jigsaw puzzle pieces taken from a half dozen different boxes, nothing fits—there is no sequence, not even of two parts.

The validity elements of the waybill are impressive—for example, the motive factor (gratitude) is clean, the ownership sequence of the waybill is unclouded, and the map shows an unknown station on a railroad (obviously the Southern Pacific) named "Walters." It took some digging to find out that it was the original name for a siding where the town of Mecca now stands.

I've flown aerial searches over the Santa Rosas more than a dozen times, and I've forgotten how many pairs of boots I've worn out in those rugged rocks. (My wife, who keeps track of such things, claims I've spent 27 foot slogging trips into the Santa Rosas.)

I've looked everywhere I could figure the mine might be. I've tried switcheroos of every kind—right for left, north for west, and sequence reverses—and even wasted some good money on a worthless so-called "psychic" who gave me a lot of bullfeathers about what my brother hadn't told me. (I'm an only son, and never had a brother!) I've looked "everywhere" but in the Santa Rosa Mountains that doesn't mean too much. The mine is probably there all right, but I just can't seem to turn the key the right way.

So now I'm going to call it quits on the search for the Lost White Papoose Mine. Like Ellen Bruckmann, I'm finding out the one thing the smartest system can't beat is the rhythmic turning of the hour glass of Old Father Time. Besides, the

last time my beloved woman told me that "this is absolutely the last Santa Rosa trip, Mister! You're old enough to know better than to go wandering alone in those gloomy old mountains!" It really sounded like she meant it!

If your bones don't ache at the end of a hard mountain day; if your wind and gizzard are good; and if you think your luck might be better than mine, then you are now welcome to what I know about the Lost White Papoose.

Decoded, those crumbling old directions read (the spelling and punctuation are his):

"About eight miles s of Fish Springs is large sandy wash. Go up main wash about five miles. (In a little side canyon you will see bunch of palm trees 14 or 15.) You will find water by digging. On up that side canyon is a streak of clay.

"Up the main canyon 1½ or 2 miles a wide canyon goes to right. About two miles up that you come to three large tanks of water. 1st tank is about 20 ft long and 12 ft wide very deep. Only get water with long rope and bucket. The other two are almost impossible to get to but can see by climbing up the hill.

"After reaching tank go n which is s side of rabbit peak until you reach first wide wash. Up that wash you will find streak of white rock. Rock will be on hill-side which is poor quality marble. Only a landmark. Then westerly until you see 2 large sabine pine trees at head of wide wash. Near them you see large white rock standing like a sentinel on guard.

"If you go from indian cabin on trail near fish springs, take the wide wash that has indian symbols on large rock. Only indian signs on that side. Go up to top of mt where you will find trail to old indian hut trail to water tank—then n by w up a side where you will find lead running n and s."

You have my sincere hopes for the very best of luck in your search, even though making the waybill public again slightly ruffles the dog-in-the-manger side of my nature. If somebody eventually finds the golden bonanza it will at least prove I'm not a complete ding-a-ling, and was chopping on the right log anyway!

So I hope that when you close your file on the Lost White Papoose Mine, the final entry will read, "I found the gold!" and not carry—like mine—a single word overstamp, in big black letters, that spells out "VERBOTEN!" □



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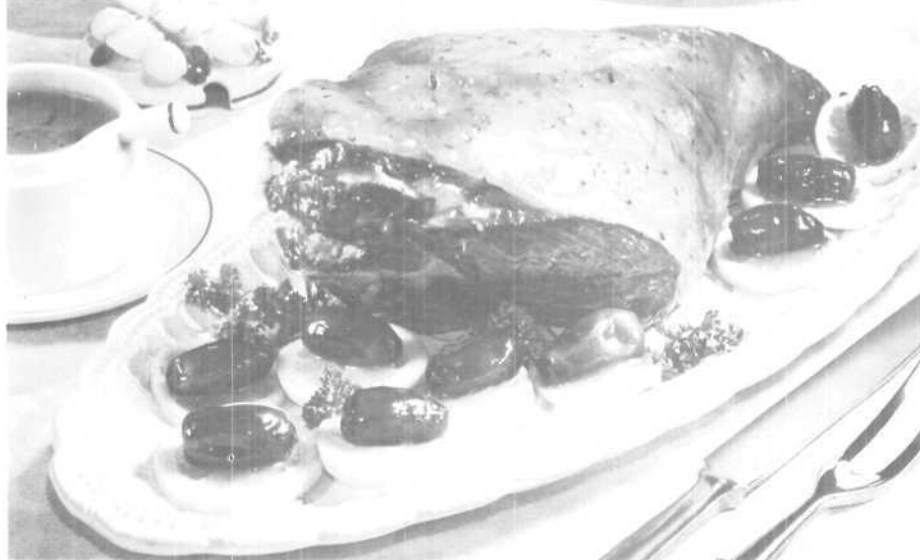
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## LEMON-DATE LAMB

- |                            |                               |
|----------------------------|-------------------------------|
| 1 leg of lamb, 5 to 7 lbs. | 1 tablespoon prepared mustard |
| Salt                       | 3 or 4 lemons                 |
| 1/2 teaspoon pepper        | 1 cup water                   |
| 1/2 cup sugar              | 12 fresh California dates     |
| 1 tablespoon cornstarch    | Parsley sprigs                |
| 1/2 teaspoon sweet basil   |                               |

Rub lamb with 1 teaspoon salt and pepper and place on rack in roasting pan. Insert meat thermometer in center of meaty part, not touching bone. Roast in 325-degrees (moderately slow) oven 2 to 2 1/2 hours or until thermometer registers 170 to 180 degrees F. for rare or until well done lamb as you prefer. Meanwhile, blend sugar, cornstarch, 1/2 teaspoon salt, basil and mustard in small saucepan. Squeeze 1 or 2 lemons for 1/4 cup juice; blend juice and water into sugar mixture. Cook, stirring, over medium heat until sauce comes to boil and is thickened.

Brush some of sauce over lamb every 10 minutes during last 30 minutes roasting-time. Slice 2 lemons into 6 slices each, discarding ends. Snip dates lengthwise with kitchen scissors; flip out pits. Arrange lemon slices in shallow pan; top each with date. Brush with sauce and place in oven with lamb during last 10 minutes roasting-time. Transfer lamb to warm serving platter; arrange lemon-date slices around lamb. Garnish with parsley. Serve with remaining sauce. Makes 10 to 12 servings.

## BANANA DATE APPETIZER

- 1/2 cup pitted fresh California dates
- 2 medium-size bananas
- 1 teaspoon grated lemon rind
- 3 tablespoons fresh lemon juice
- Iceberg lettuce
- 1/4 cup salad oil
- 2 teaspoons finely chopped onion
- Mayonnaise or salad dressing
- 4 walnut halves

Slice dates crosswise into rings. Peel bananas and cut into halves; split halves lengthwise. Roll in mixture of lemon rind and juice. Arrange lettuce cups on 4 salad plates; shred 2 cups lettuce and place 1/2 cup in each. Mix remaining lemon juice mixture with oil, dates and onion. Place 2 pieces banana in each lettuce cup; ladle dressing over. Dab with mayonnaise; garnish with walnuts. Makes 4 servings.







### DATE APPLE BREAD

- |                                 |                             |
|---------------------------------|-----------------------------|
| 1 or 2 apples                   | teaspoon ground nutmeg      |
| 2 1/2 cups sifted flour         | 1/2 cup butter or margarine |
| 3 teaspoons baking powder       | 3/4 cup sugar               |
| 1 teaspoon salt                 | 2 eggs                      |
| 1/2 teaspoon cinnamon           | 1/3 cup milk                |
| 1/2 teaspoon ground mace or 1/4 | 1 cup packaged diced dates  |

Core and finely chop enough apple to measure 1 1/2 cups. Sift flour with baking powder, salt, cinnamon and mace. Cream butter with sugar, then beat in eggs. Beat flour mixture into creamed mixture alternately with milk; fold in dates and

apple. Turn into greased and floured 9 x 5 x 3-inch loaf pan. Bake in 350-degree (moderate) oven 1 hour and 15 minutes or until bread tests done. Cool 10 minutes in pan, then turn out and cool on rack. Makes 1 (9x5x3-inch) loaf.

### NUTRITIONAL INFORMATION

Domestic Dates\* (without pits) Natural and Dry Ingredients in Edible Portion of 1 lb. of Dates

Protein	10.0 grams	Potassium	2939.0 mg
Fats	2.3 grams	Vitamin A	230.0 units
Carbohydrates	330.7 grams	Thiamine	.40 mg
Calcium	268.0 mg	Riboflavin	.44 mg
Phosphorus	286.0 mg	Niacin	9.6 mg
Iron	13.6 mg	Food Energy	1243 calories
Sodium	5.0 mg		

\*Source—Agricultural Handbook No. 8, United States Department of Agriculture

### SHEIK'S DATE CURRY

- 1 cup California dates
- 6 tablespoons butter or margarine
- 2 teaspoons curry powder
- 1/8 teaspoon ground cloves
- 2 teaspoons salt
- 2 onions, sliced
- 2 cups water
- 1/3 cup lemon juice
- 2 teaspoons grated lemon rind
- 2 lbs. fresh deveined shrimp
- 2 tablespoons cornstarch
- 2 tablespoons water

Quarter dates crosswise. Melt butter in large skillet. Stir in seasonings and onion. Saute onion 2 or 3 minutes. Add 2 cups water, lemon rind and juice and shrimp. Bring just to a boil. Cover and reduce heat; simmer 5 to 7 minutes, until shrimp is tender. Blend cornstarch with 2 tablespoons water. Stir into shrimp mixture. Cook until sauce is thickened. Add dates and heat a few minutes. Serve over hot rice or noodles as desired.



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# THE MEDJHOOL... DESERT DELICACY

by Lee Birch

**D**O YOU know you can eat a fruit that has been relished by sheiks and sultans at their sumptuous banquets dating back to biblical days?

If you've never eaten a date large as a prune, a date so plump and succulent that you can bite into it and miss the seed—then you have a treat in store. The American public is just beginning to get acquainted with the Medjhoor date and for those who have, it is truly an unforgettable experience.

The Medjhoor date palm originated in Africa and was brought from Morocco through the efforts of an American from the U.S. Department of Agriculture. He had eaten some Medjhools in London and had fond memories of them. Later, when opportunity knocked, this foresighted man took advantage of the circumstances to introduce Medjhools into the United States.

Date palms have been in existence for more than 8,000 years and there are many references to it in the Bible. Its fringed leaves have long been tokens of victory and beauty. It is known that it will bear fruit for 200 years, not counting the seven years it usually takes for it to start producing fruit. A date palm will grow from 60 to 100 feet high. The sex of a date palm is unknown until it flowers if the shoot is not attached to the parent palm. As the male tree does not bear fruit, the best way to insure planting a tree that does is to plant the suckers that grow from the base of a female tree. This method provides reproduction of the prime bearers as well.

These trees are so important a food source in the world that they are a consistent reservoir of income for their owners, and most groves in Africa are handed down from father to son. The date is amply supplied with protein and sugar pectin; so much so that a half pound of dates and a glass of milk make a full nutritional meal.

Nothing is left to chance with this precious food supply. The fear of famine is so great in Africa that even an extra supply of pollen is saved from one year to the next as a precautionary measure in case of adverse weather conditions. Each season every tree is hand pollinated to get the full benefit of ten to fifteen clusters of dates, weighing from 300 to 500 pounds per tree. Also, at different times, the clusters must be thinned, air circulation provided and the dates covered for protection from the weather. In Southern California the picking normally starts in September.

In May of 1927, an American, Mr. Walter T. Swingle, of the U.S. Department of Agriculture, was invited to join representatives of various countries as a commission to investigate the Baioudh disease infecting the date palms in Morocco. By chance, this was the same man who had previously bought Medjhools in London. In their travels, the commission saw the destruction wrought by the parlatoria scale (which had been introduced from Algeria at Colomb Bechar) and were on their way farther south when they were delayed several days at Bou Denib waiting for a military escort into the

troubled French occupied country.

During this delay, Swingle became acquainted with the Sharif of Bou Denib, who invited Swingle to dinner. This Sharif was also a Hajji and as such was the religious and civil head of the oasis, having complete authority there. A Sharif is a lineal descendant of Muhammad and a Hajji is one who has made a pilgrimage to Mecca.

Over a dinner of roast lamb, kous-kous and tea, Swingle discussed the Medjhoor date with the Sharif, knowing that about 100 miles west of Bou Denib was Tafilalet, the greatest date oasis of them all and especially noted for its Medjhoor dates.

To Swingle's surprise, he learned from the Sharif that the Arabs were paid two cents a pound for the same dates he had paid 24 cents a pound for in London. He informed the Sharif of the London price and told him that he thought the price of two cents was not high enough. Swingle added that he felt if the dates were graded for moisture content and size and were protected from insects, they should ask three to four cents more per pound.

Pleased with the prospects of more income and grateful for the information, the Sharif was glad to show the American the operation of their Medjhoor gardens, listening attentively for any other suggestions he might have. Swingle then asked the Sharif if there was a way to buy some Medjhoor offshoots to take back to America since we did not have that variety. Happy to return a favor, the Sharif and Swingle went through orchard after orchard searching for a grove that did

not have any evidence of the yellowing center in the top of the trees, the sign of the Baioudh disease. They finally found what seemed like a healthy garden, and the native workmen hastily cut six uniform offshoots, breaking off five more little shoots in the process. When packed for shipping, the five small offshoots were used to help fill in the spaces around the six larger shoots and Mr. Swingle was charged only for the six larger offshoots of standard planting size.

Five weeks later, 11 Medjhoor offshoots arrived unheralded in Washington. Fearful of the Baioudh disease, the authorities decided that the plants would have to be grown under strict supervision and conditions for several years in a remote area away from other palms to prevent contaminating American groves.

Meanwhile in Morocco, they had stopped planting Medjhools because of their susceptibility to the Baioudh disease.

Where to find an area with a climate acceptable for growing dates where no date palms had ever grown, seemed an impossible task. But found it was. The southern tip of Nevada was discovered to be nearly ideal in climate and Nevada had no

*The male and female bloom of the date palm, which must be hand pollinated.*

date palms. Besides a favorable climate, however, dates not only require a sandy alkaline soil, they need lots of water which meant more searching. Finally a farm was found that had a well which could assure a good water supply. It was owned by an Indian who was amiable to raising the offshoots for the government.

After all this seeking and appraisal, it was learned the farmer's land was not within the Mojave Indian Reservation and the Indian farmer had no title to his land! So the government changed the reservation boundary officially to include it!

The 11 offshoots were first fumigated and then planted on July 4, 1927 and they all grew. One day, however, while the farmer was away, his dog dug up two of the little shoots which died, leaving nine plants.

A few clusters of dates and some new suckers had grown by the third year. To bear fruit this early was very rare, especially with heavy sucker growth, so it was an indication that they would do well in their



new homeland.

At long last, in 1936 the quarantine period was over and the nine Medjhoor palms and their offshoots were brought to the Indio Date Garden of the U.S. Department of Agriculture where they thrived and provided more offshoots for planting other groves.

Today you can find Medjhools growing from Indio to Yuma. People who have never cared for dates before drive miles out of their way to buy them. For this rare and royal gift, our thanks to an enterprising American. □

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# Rambling on Rocks

by  
Glenn  
and Martha Vargas

## ORGANIC MINERALS: Produced By Living Things

ALL OF us were told at some period in our early education that all things on earth fall into three categories; animal, vegetable and mineral. Each of us can easily understand what animals are, as we are in that group, and it does not take much thought to grasp the meaning of plants. These two are only a small part of the world we see around us. The mineral portion far exceeds the plants and animals combined.

If we ponder the mineral portion of the earth for a moment, we soon realize that all of it was here before plants and animals appeared, regardless of how we may think they originated. It is this position that sets rocks and minerals apart.

All living things depend upon minerals for their existence. Plants, as well as a few simple animals are able to utilize minerals directly in the act of producing their bodies. Most animals depend upon plants directly or indirectly for their existence. This process is not all one way, however, and many living things do, in a sense, produce what appear to be minerals. These are loosely classified by some as the organic minerals.

It is true that living things must take in minerals as raw materials, but the final product is usually far different from the original. It is interesting that a good number of these "minerals" produced by living things are used as gems. Many others are used for industrial purposes, and some have no important use.

The two most important to industry are coal and oil. Coal is the remains of plants that grew profusely in ancient marshes,

and upon their death fell to the ground and became compacted into a mineral that will burn. Oil is evidently part of the remains of very small marine animals known as foraminifera.

A small one-celled plant called a diatom secretes an opal shell for itself. The opal is formed of silicon dioxide (much like quartz) taken as a raw material from the large bodies of water in which diatoms live. When these plants die, the tiny shells accumulate on the bottom and sometimes form huge deposits. The material is known as diatomite, and is often mined. It has many uses, chiefly as a mild abrasive, and for making filters. Diatomite is sometimes seen on the market in chunks to be used as a carving medium, and goes by the trade name of "maple rock."

Deposits of oyster shells have had a place in industrial uses, such as the manufacture of cement for making concrete, but this has been minor. The industrial and everyday uses of organic minerals are sometimes very interesting, but those that can be classed as gem materials are much more fascinating.

We have mentioned coal above, and it contributes to this group. Jet is a very compact and tough form of brown coal. The word brown here designates a type of coal rather than color, for jet is a brilliant black. The use of jet as an art medium predates written history, and was utilized by prehistoric peoples wherever it was available. Its use persists today in nearly all cultures. It was an ideal material for ancient artists as it is soft, yet tough, and could be polished with simple tools and abrasives. Jet carvings of animals for use as fetishes were made by the Indians of our Southwest.

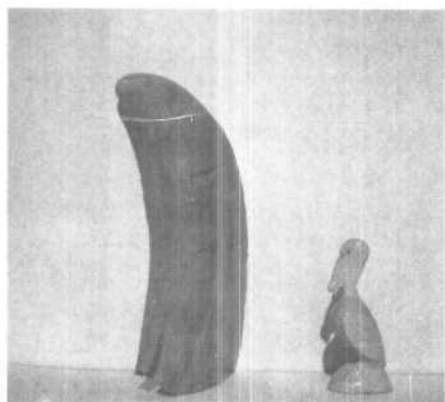
One of the most ancient of organic gem materials was amber. It is a fossil resin that exuded from a now extinct pine that grew in many parts of the world about 40 million years ago. The most prolific area known is what is now the Baltic Sea region. As the pitch flowed from the trees, it took with it bits of bark, leaves, pollen, insects and other articles. The insects were trapped in the pitch when they accidentally came to rest upon it, or to feed on the tree. These various inclusions in amber help to tell scientists what the climate and living things were like in those days.

Most important of all is the fine range of colors of amber; from light yellow,

through orange, into red. It is much like jet in its working qualities, being fairly soft and tough. It will melt at about 300 degrees Fahrenheit, thus the chips resulting from the carving process were often melted together to make more carving material. Any piece of amber with an entrapped insect makes it of higher value. All types of amber have been made into many kinds of gems to be set into jewelry.

A pine that grows in New Zealand produces a resin known as Kauri gum. Some have called this amber, or recent amber, but the names are not really correct. Kauri gum has many of the characteristics of amber, but lacks some qualities that evidently are the result of aging.

Undoubtedly we will be accused of stretching a point if we include ivory as an organic mineral. If we look at the well-known tusk or tooth type, we find it is a type of calcium phosphate, the mineral



*Whale tooth and carved ivory.*

apatite! The other types of ivory are not the same chemical, but the line to be drawn is very narrow.

There are two types of ivory, the animal type, known as dentine ivory, and a type from palm trees, known as vegetable ivory. The word ivory is almost synonymous with the elephant. It is certainly the most important source, but there are others. Much of the ivory carved by the Eskimo and other far northern peoples is from the mastodon, and thus it is a fossil ivory. Actually, mastodon and elephant ivory are nearly identical. The Eskimos also carve the tusks of the walrus, and other peoples sometimes use other types.

The hippopotamus, deer, two species of whale, the norwahl and the sperm whale, and even wild hog tusks furnish material worth carving. Some of these, such as the teeth of the hippopotamus, are very fine grained, and are even su-

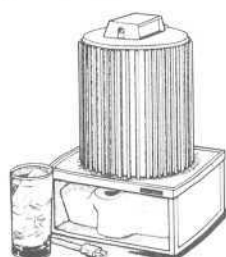
perior to some of the more usual types of ivory.

Vegetable ivory is the nut from the Tagua palm of tropical South America, and the Doom palm of Africa. The South American Tagua is the most important and a sizeable industry is evident in a number of countries along the northern Andes mountains. The nuts, about the size of a hen's egg, look much like an inflated Brazil nut and are marketed under the name of corozo nut. It is almost unbelievable how tough these nuts can be. They are made into carvings similar to that of dentine ivory.

Ivory is attractive to the carver because it is extremely tough and reasonably soft. With only simple tools, very intricate and seemingly fragile carvings can be made. Portions of the carvings can be very thin without fear of breakage because of the extreme toughness. These nearly pure white materials, accompanied by a unique soft pattern in some types, make an interesting carving medium.

As long as we have gone out on a limb with ivory, we may as well go all the way and include tortoise shell. This is a plate, about one-eighth inch thick, taken from the back of the Hawks-bill turtle, found in tropical seas. Tortoise shell is not commonly carved, but is frequently used for inlays. It can be heated slightly to make it soft and pliable. This allows the artisan to bend or otherwise form it. Often, precious metals are embedded in it by heating the metal and then pressing it into the shell. □

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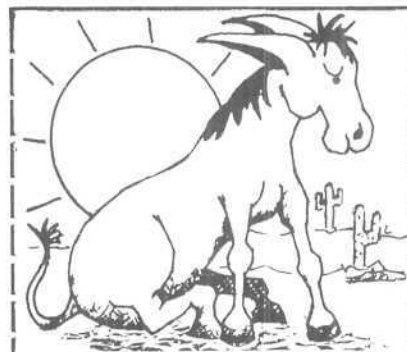
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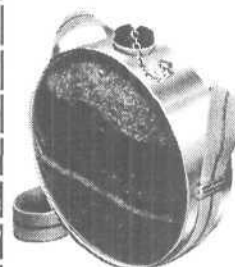
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SURVIVAL BOOKS! Guerrilla Warfare, Wilderness Living, Medical, Guns, Self Defense, Nature. Books—Vital, Fascinating, Extraordinary! Catalog free. Adobe Hacienda, Route 3, Box 517A, Glendale, Arizona 85301.

"DEAD MEN DO Tell Tales" By Lake Erie Schaefer. Facts about Frank Fish's mysterious death, still unexplained. Sequel to "Buried Treasure & Lost Mines" the Treasure Hunters manual. \$3 postpaid. L. Erie Schaefer, 14728 Peyton Drive, Chino, Calif. 91710.

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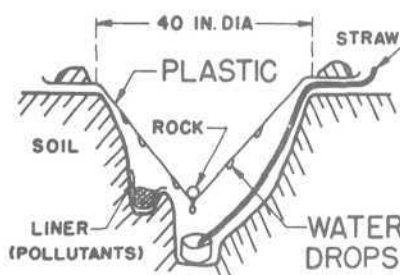
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# Letters to the Editor

Letters requesting answers must include stamped self-addressed envelope.



## Brine Shrimp . . .

I have spent many vacations in the area around Mono Lake, but never made the trip to Bodie. Will do so next year, however, since reading Robert Likes' story.

His reference to "no marine life" in the lake puzzles me, for, of course, it is not a sea or ocean; but Mono Lake has millions of tiny living creatures. The natives call them brine shrimp.

I dipped a gallon into a glass jug last September. The "shrimp" were quite active and easily seen.

RAY F. SHERMAN,  
Montebello, Calif.

In the December issue the article "Mono Mills to Bodie" referred to Mono Lake as the "Dead Sea of America."

Although the lake does not support fish life, it does maintain groups of five photoplankton and six zooplankton. One species of zooplankton is brine shrimp which is harvested for fish food.

JOHN ARLIDGE,  
Reseda, Calif.

## So Do We . . .

DESERT Magazine is great. I wish I could send your magazine to everyone, everywhere. Let's have some desert snake stories too.

GEORGE PAUL,  
Eagle, Colorado.

*Editor's Note: See article on the Desert Side-winder in the January issue.*

## Needs Help . . .

I am doing research on some desert plants and would like anyone of you deserts nomads, hikers, bird watchers, prospectors, biologists, etc., who have had any encounters with any desert plants, and suffered any injury which left a lingering effect, such as a stinging or burning, cramps, numbness, paralysis, etc., to let me know.

Perhaps you might identify the plant in some degree and a brief history of your experience would be greatly appreciated.

Any knowledge of any plants containing a toxin, would be very interesting. Thanks a heap for any help on the above.

GIL MOYER,  
34751 Via Echo,  
Palm Springs, Calif. 92262.

## School Project . . .

I am enclosing pictures of a composite ghost town my 4th grade boys made. After covering DESERT Magazines and 27 books—also the best and final touch—a set of paintings from you as well as your suggestions, the boys really lived an experience none will forget. The pictures don't do the project justice. It is on a  $\frac{3}{8}$ "x2"x42" base. The boys scaled down various buildings on  $\frac{1}{4}$ " graph paper and then made the buildings out of balsa wood. They kept their notebooks and watercolor drawings which were in an all district fair.

The boys wanted me to express their appreciation for your help.

JOE WADDINGTON,  
San Clemente, California.

## Buist and Marquiss . . .

Praise to Lois Wolf Buist on her intriguing and well-written article on Shorty Harris in your November issue.

Ken Marquiss' articles are another of my favorites. With authors of this caliber an editor builds a great magazine—and a reputation for himself!

LEE M. WELLS,  
Morro Bay, Calif.

## Singular Salamander . . .

The "Singular Salamander" article by K. L. Boynton in the October issue was outstanding! This must be one of the very best articles he ever wrote. The color photograph reproduced superbly. I hope this article will help stimulate the BLM to purchase the  $\frac{1}{4}$  Section so that *Batrachoseps aridus* can have its locality protected also. It does not do much good to get the animal protected if the locality can be legally decimated, as was so aptly expressed by Mr. Boynton in the article.

It was a great pleasure being associated with Mr. Boynton on this article and again express my gratitude for the fine finished product.

DR. ARDEN H. BRAME, JR.  
Department of Parks & Recreation,  
County of Los Angeles.

Thank you very much for the October issue which included K. L. Boynton's fine article on the desert salamander.

The discovery of this distinct salamander where, as Mr. Boynton noted, "no salamander had any business to be living," points up the urgency of the Bureau's California Desert Program and the resource inventories that will be part of it. We may find other unique resources on the desert.

By copy of this letter, I'm asking Del Val in Riverside to contact Dr. Brame regarding actions that may be taken to preserve the habitat of the desert slender salamander.

J. R. PENNY,  
California Director,  
U. S. Bureau of Land Management.

## Hidden Spring . . .

I want to let you know how much my wife and I enjoyed our jeep trip to the Hidden Spring after we stopped in to visit you. We followed the directions in the magazine you gave us and found both the spring and the cave with less difficulty than finding your shop in town.

One of the things we really appreciate in your articles is the care in giving directions. We also enjoy the background and historical sketches attached to your trip reports. We like to know what has happened in a place we are visiting.

L. M. MUSIL,  
San Jose, Calif.

*Editors' Note: See the article in this issue on the Mecca Hills area and Hidden Spring. For detailed directions to Mecca Hills canyons and other interesting areas, stop by Desert Magazine in Palm Desert.*





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